BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PROPOSED PROSPECTING ON SEVERAL PORTIONS OF THE FARMS BLAAUWBANK 505 JQ, DELAREY 164 IQ, DELAREY 168 IQ, DELAREY 171 IQ, GREENWAY 715 IQ, MALONYS EYE 169 IQ, STEENEKOPPIE 153 IQ, VLAKPLAATS 160 IQ, WALLIS HAVEN 154 IQ, WOLVEKRANS 156 IQ AND ZUIKERBOSCHFONTEIN 151 IQ, MAGALIESBURG, GAUTENG

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Submitted to:
Department of Mineral Resources
Gauteng Region
Johannesburg

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: Cold Gold Pty) Ltd
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- **GP30/5/1/1/2(10669)PR**

DOCUMENT CONTROL		
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Date	May 2021	May 2021

EXECUTIVE SUMMARY

ELEMENTAL SUSTAINABILITY (Pty) Ltd as independent environmental consultant was appointed by Cold Gold (Pty) Ltd to undertake the Environmental Authorisation Application process for the proposed prospecting rights in the City of Mogale Local Municipality, Gauteng Province. Total Area approximately 8,475.41 hectares. The properties include the following:

RIGHT NUMBER	Properties
GP30/5/1/1/2(10668)PR GP30/5/1/1/2(10657)PR GP30/5/1/1/2(10669)PR	Portions 1, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 44, 45, 46, 47, 48, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87 & 110 of Wolwekrans 156 Portions 7, 19, 16, 17, 19, 22, 24, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 50, 53, 54 of Delarey 164 Portions 1, 3 of Delarey 168 Portions RE, 1, 2 & 3 of Delarey 171 Portions RE, 9, 10, 11, 12, 13, 20, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137,138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 201, 202, 267, 268, & 291 of Farm Vlakplaats 160 Farm Wallis Haven 154 Portions RE, 3, 4 & 6 of Malony`s Eye 169 10, 44, 45, 82, 52, 81 of Farm Steenekoppie 153

Legislative Requirements

The most important legislation applicable to the proposed project are listed below:

- **National Environmental Management Act (No. 107 of 1998) [as amended]**
  Section 28: Duty of Care and responsibilities to minimise and remediate environmental degradation.
- **EIA Regulations, 2014 (Government Notices 982) [as amended]**
  The EIA regulations prescribe the manner and content of the Basic Assessment and Public Participation Processes to be followed.
- **Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) [as amended]**

In order to apply for a prospecting right, an application was submitted on the Department of Mineral Resources' SAMRAD online application system.

Need and Desirability

The project has some align with the objectives of the municipal Spatial Development Framework (SDF) and Integrated Development Plan (IDP) Draft Magaliesburg Precinct Plan 2020, however, it will not compromise the integrity of these respective forward planning documents, due to the small extent and fairly short-term period of the prospecting activities. Unemployment within the Mogale City Local Municipality is high, according to the SDF of Mogale City Local Municipality. The Cold Gold operations will have a positive impact on the socio-economic conditions of the local communities involved, should the results of the prospecting show that feasible reserves are present.

The approval of this prospecting application will not compromise the integrity of the existing environmental management priorities of the area as defined in the SDF of Draft Magalies precinct Plan, provided that sensitive areas as indicated by the specialist are avoided and the mitigation measures as recommended in this report and in the EMPr (refer to Part B of this report), are implemented.

The geology of the area is known for gold resources, and from a prospecting perspective is ideal for the type of land use. However, in terms of the environment, the location has several sensitive aspects as identified by specialist studies which impacts will be managed by the EMPR.

Prevention and mitigation measures as recommended by the specialists, were included in this Basic Assessment Report (BAR) and the Environmental Management Programme (EMPR) (please refer to Table 17 Mitigation Measures (the EMPR section). The implementation of the EMPR will ensure that the environment is affected to the minimum. The potential cumulative impacts were also assessed and found not to be of high significance after mitigation for the prospecting period.

Alternatives

Prospecting is conducted in phases, where the activities and location of drilling is dependent on the previous phase. Therefore, the specific locations and extent diamond core drilling cannot be predetermined. The overall prospecting area is indicated in Figure 1. Areas to be avoided in terms of sensitivities are also indicated on the sensitivity maps in this report.

The following alternatives were investigated as feasible alternatives:

a) The area on which or location where it is proposed to undertake the activity.

The geological information indicated that the area potentially contains gold and silver. The site is; therefore, the preferred site and no other site alternative sites are not considered.

b) The type of activity to be undertaken

Prospecting activities will not compromise any future land uses on the study area. Should results of the prospecting indicate a viable reserve is present, then a comprehensive social and environmental impact assessment will need to be conducted to obtain environmental authorisation in accordance with legislation.

c) The design or layout of the activity

The specific locations of intrusive drilling activities will be determined during Phase 1 of the Prospecting Works Programme. All infrastructure to be developed will be mobile and temporary. The prospecting activities will be located outside of the sensitive areas and buffer zones as identified by the specialist.

d) The technology to be used in the activity

In terms of technologies proposed, prospecting work will initially entail a high-level desktop study and potential desktop resource evaluation. This will include a data search of any previous drilling sampling activities, exploration activities, existing maps and relevant historical data. Desktop studies to be undertaken would include studying of geological reports, prospecting data, plans/maps, aerial photographs, topography maps and any other related geological information regarding the specific area.

On successful completion of this desktop study a detailed prospecting map will be compiled for the exploration drilling which will in turn inform the resource estimations. The type of invasive prospecting activities has been determined based on the historic success of the methods to be utilised. The prospecting activities are, however, dependent on the preceding phase (non-invasive) as indicated above and therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

Diamond core drilling is planned to be executed on a phase-by-phase basis. Planned borehole depths will be determined during the desktop study, but it is estimated that drilling activities will be conducted by drilling only 15 holes per prospecting right. Logging and sampling of the borehole core will be performed to evaluate the area.

No bulk sampling as a prospecting method will be undertaken as this method is an un-feasible method of prospecting for the resources.

e) The operational aspects of the activity

No permanent services including water supply, electricity, or sewerage facilities are required. All infrastructure to be developed will be mobile and temporary including generators, portable toilets and water tanks.

f) The option of not implementing the activity

According to Section 24 of the Constitution, a development must be ecologically sustainable and also support socio-economic development.

Not implementing the prospecting activities will result in a loss of information of mineral reserves present on the study area. Should economically feasible reserves exist on the study area and the applicant cannot prospect, the opportunity to utilise the reserves will be lost, i.e., the minerals will be sterilised, and resultant socio-economic benefits will be lost.

The proposed prospecting activities has the potential to have a negative impact on the ecological environment as well as the social environment of the area. These impacts, however, can potentially be prevented, minimised, mitigated and managed to low and very low levels, as shown through the impact assessment.

Public Participation

A Public Participation Process is undertaken for the Environmental Authorisation for prospecting. The process is undertaken to ensure compliance with regard to the requirements in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) [as amended] (MPRDA) and the Environmental Impact Assessment Regulations (2014) [as amended].

Tasks undertaken for the Public Participation Process (PPP):

- Identification of key interested and affected parties (affected and adjacent landowners) and other stakeholders (organs of state and other parties).

Interested and Affected parties (I&APs) representing the following sectors of society has been identified:

- National, provincial and local government.
- Agriculture, including local landowners (affected and adjacent).
- Community Based Organisations.
- Non-Governmental Organisations.
- Water bodies.

- Tourism.
- Industry and mining.
- Commerce; and
- Other stakeholders.

Formal notification of the application to interested and affected parties (including all affected and adjacent landowners) and other stakeholders:

- Publication of media advertisement (English) in the Krugersdorp News on 14 May 2021.
- Site notices will be erected on site and at visible locations close to the site on 14 May 2021.
- I&AP's and other key stakeholders, who included the above-mentioned sectors, will be directly informed of the proposed development by e-mail on 14 May 2021.

I&APs were given 30 days to comment and / or raise issues of concern regarding the proposed development. The commenting period is from 14th of May 2021 to 14th of June 2021:

- Consultation and correspondence with I&APs and stakeholders.

All I&AP registrations and comments that are received from stakeholders will be formally recorded in the Comments and Responses Report. The Draft BAR and EMPr will be released for a period of 30 days from 14 May 2021 to 14 June 2021. Hardcopies of the Draft BAR and EMPR will also be submitted to all organs of state and relevant authorities. In addition, copies are placed at the Magaliesburg Local Library and can be obtained from Elemental Sustainability on request.

Next phases of the public participation process

All comments received from I&APs and organs of state and responses sent will be included in the final BAR and EMPR to be submitted to the Competent Authority (CA).

Specialist studies

The following specialist studies have been conducted:

- Wetland Assessment;
- Ecological and Biodiversity Scan;
- Cultural heritage desktop assessment; and
- Closure Plan and Cost Assessment

The main objective of the specialist studies is to provide independent scientifically sound information on issues of concern relating to the project proposal.

The findings and recommendations identified by the various specialist studies undertaken, were incorporated into the Basic Impact Assessment.

- Wetland Assessment

Thirty-seven (37) wetland areas were recorded and classed by the National Wetland Map Version 5 (2018). The landform setting of a wetland plays an important role in determining key components of the water balance and the related geomorphological processes maintaining the wetland functions (Ellery et al. 2009).

These wetlands were delineated, and a 500 m buffer of exclusion was calculated for each. According to the Department of Water Affairs and Forestry Regulation GN1199 all wetlands occurring within 500 m of a development/activities should be considered as sensitive features. Development within 500 m of wetlands trigger the Water Use Licence application process. All proposed prospecting activities should take place outside of the 500 m exclusion buffer zone.

- Ecological and Biodiversity Scan

The project area is located over two biomes, i.e. Grassland and Savanna. The northern section of the Prospecting Right area is located in the Savanna Biome. The Savanna Biome is the largest biome in South Africa, covering 34.3% of the country (about 435 000 km2). It is a mixture of grasses and trees or shrubs. Savanna stretches from the Kalahari in the north-west across to the lowveld in the north-east and southwards to the lowlands of KwaZulu Natal and the Eastern Cape. It is found from sea level to about 2 000 metres above sea level. More than 5 700 plant species grow in the Savanna Biome. They include various types of grasses (e.g., Rooigras) and trees like the Baobab, Mopane, Camel Thorn and Knob Thorn.

The Southern section of the Prospecting Right area Is located in the Grassland Biome. The Grassland Biome is found chiefly on the high central plateau of South Africa, and the inland areas of KwaZulu-Natal and the Eastern Cape. Grasslands are dominated by a single layer of grasses. The amount of cover depends on rainfall and the degree of grazing. Trees are absent, except in a few localized habitats. Geophytes (bulbs) are often abundant. The Grassland Biome is considered to have an extremely high biodiversity, second only to the Fynbos Biome. Rare plants are often found in the grasslands, especially in the escarpment area. These rare species are often endangered, comprising mainly endemic geophytes or dicotyledonous herbaceous plants. Very few grasses are rare or endangered.

Three (3) vegetation types, according to Mucina & Rutherford (2006), occur in the project area, namely Gold Reef Mountain Bushveld (SVcb9), Moot Plains Bushveld (SVcb8), Gauteng Shale Mountain Bushveld (SVcb10) and Carletonville Dolomite Grassland (Gh15).

The National List of Ecosystems that are Threatened and need of protection (GN1002 of 2011), published under NEMBA (Section 3.1.1), lists national vegetation types that are afforded protection based on rates of transformation. The thresholds for listing in this legislation are higher than in the scientific literature, which means there are fewer ecosystems listed in the National Ecosystem List versus in the scientific literature. The relevant vegetation groups applicable are all listed as Least Concern in the "National List of Ecosystems that are Threatened and need of protection", which coincides with the threat status provided by the 2018 National Biodiversity Assessment.

Sensitivity will be directly related to specialised niches found within mountainous or rocky terrain. As is visible from the Ridge assessment, the Prospecting Application area have several classified ridge structures on the property, and these should ideally be avoided during prospecting activities.

Within the National Threatened Ecosystems (2011 & 2018), the area generally has a status of Least Concern and is known to be Poorly Protected.

Sections of the study area are situated on areas classed as Ecological Support Areas (ESAs) and Critical Biodiversity Areas (CBAs).

The Fossil Hominid Sites of SA Heritage site, which is protected in terms of the NEMPAA, is located approximately 3.5 km to the east of the project area. The northern-most section of the project area is situated in the transition zone of the Magaliesberg Biosphere Reserve.

The area in which the project footprint is situated is classified as Highest Biodiversity Importance and Moderate Biodiversity Importance by the Mining Biodiversity Guidelines.

No NPAES occur within 10 km of site.

Baseline Assessment:

Flora Assessment and Species lists compiled

- The most prominent family is Asteraceae, with thirty-four (34) species, followed by Fabaceae with thirty-one (31) species. Twelve (12) endemic species and thirty-seven (37) exotic species are known to occur within the area queried.
- Of the two hundred and sixty-three (263) species previously recorded for the area, one species is a Species of Conservation Concern (SCC) in terms of its Red List status:

- *Pearsonia bracteata* is classified as Near Threatened (NT) in terms of the SANBI Red List. This species occurs in in Plateau Grassland ecosystems, in the Wolkberg and Pretoria to Klerksdorp area. Plants in Gauteng and North West occur in gently sloping Highveld grassland. Based on available distribution data *Pearsonia bracteata* is considered to have a low likelihood of occurrence on the project area.
- Ten (10) flora species recorded on POSA for the area are listed as protected in the TNCO.
- The POSA records for the area do not contain any species protected in terms of the NFA.
- No species recorded for the area are listed in terms of the ToPS list.
- No species listed in the GDARD, Gauteng Biodiversity Management Red and Orange List species, were recorded as occurring on the project area.
- Of the thirty-seven (37) exotic plant species recorded on POSA for the area queried, fourteen (14) are listed as alien and invasive plant (AIP) species in NEMBA, 2004 (Act 10 of 2004).
- Fifteen (15) species were found to possibly occur on site that have medicinal uses:

Fauna Assessment and Species lists compiled

- Mammals: 2627BA recorded a total of fifty-five (55) species. A total of seven (7) species has a red listed status and could occur within the larger project area and another species has been added based on its mention in the National Screening Tool Report, which brings the total to nine (9).
- Avifaunal: two hundred and forty (240) species have been recorded for the specific pentads from the data collected within the Southern African Bird Atlas Project 2 (SABAP2). Twelve (12) species of conservation concern could occur. Some of the species listed (SCC) seems to be habitat specialists mostly associated with grassland and water. The water bodies should be avoided, as well as the ridge features, which has natural grassland habitat. Protecting sensitive landscapes automatically protects sensitive biodiversity. Most of these species are associated with water related habitats and therefore these species, although likely only visitors around the specific site, will likely be focussed in the IBA, the Magaliesberg IBA towards the north of the prospecting right extending into the known ridges occurring on the properties (refer to Figure 19).
- Butterflies: A Hundred and four (104) recordings for butterflies within this region, of which only one (1) of the species has a SCC status as per National Red Data List (South Africa Butterfly Conservation Assessment - SABCA 2013 - Appendix C).
- Other Invertebrates: Six (6) Dung beetles, nine (9) Lacewing, fifteen (15) Odonata, two (2) scorpion and three (3) spider species have been recorded within the area, but none of these species is known to have a red listed status. An invertebrate, namely Clonia uvarovi (Uvarov's

Clonia) has also been reported within the Screening Tool Report for the specific area and has a redlisted status (Vulnerable).

- Reptiles: A total of thirty-seven (37) species have been historically recorded within the QDS, with only one (1) species is listed as SCC.
- Amphibians: A total of twelve (12) species are shown on ADU, with only one (1) listed as SCC.

ECOLOGICAL SITE SURVEY RESULTS

Floral Assessment Results

The proposed development footprint is situated on varied topography ranging from undulating plains to ridges. The Bloubank River and various of its tributaries, as well as tributaries of the Magalies River occur on the project site.

Land uses, on and adjacent to the project area, include: crop cultivation, livestock grazing, natural vegetation, residences, businesses, and agriculture related infrastructure.

Existing impacts on the vegetation of the study area include: roads and tracks, crop cultivation, proliferation of AIP species, livestock grazing, human and traffic movement and infrastructure development.

The majority of the project site can be characterised as Grassland, with rocky outcrops exhibiting vegetation composition associated with montane bushveld. Note that the ridges toward the far north of the project area were not surveyed in detail as these sections were not included in the focus area provided by the applicant.

In natural and undeveloped areas, the grass layer was generally dominant and well developed. Dominant grass species recorded during the site survey included *Aristida bipartita, Aristida congesta, Cynodon dactylon, Digitaria eriantha, Eragrostis lehmanniana, E. plana, E. curvula, E. gummiflua, Hyparrhenia hirta, Hyparrhenia tamba, Loudetia simplex, Monocymbium ceresiiforme, Panicum natalense, Melinis repens, Setaria pumila, Setaria sphacelata*, and *Sporobolus africanus*.

The forb layer comprised typical grassland species that are also representative of the reference vegetation types, such as *Barleria macrostegia, Cephalaria zeyheriana, Cleome maculata, Commelina africana, Convolvulus sagittatus, Cucumis zeyheri, Dicoma anomala, Euryops laxus, Geigeria ornativa, Helichrysum harveyanum, Hypoestes triflora, Nidorella hottentotica, Ornithogalum juncifolium, Plantago lanceolata, Senecio erubescens, Sida dregei, Sonchus dregeanus*, and *Trachyandra asperata*.

Rocky outcrops surveyed during the site visit were found to be less disturbed and exhibited higher diversity of species.

General findings:

- Two (2) species protected in terms of the TNCA were identified to occur on the project area, namely Cussonia paniculata (Highveld cabbage tree) and Protea roupelliae (Silver sugar bush).
- Cussonia paniculata is endemic to South Africa and is listed as Least Concern on the SANBI Red List. This species was identified on rocky outcrops and is expected to occur on ridge areas as well.
- Protea roupelliae is not endemic and is listed as Least Concern on the SANBI Red List. This species was identified in areas considered as primary grassland.
- None of the floral species recorded during the site survey are listed in the ToPS list or the NFA. No National SCC were identified during the site survey.
- Eight (8) exotic species, of which four (4) are categorised as AIP in terms of NEMBA, were identified to occur on the project area. Acacia decurrens, A. mearnsii, Pinus spp. and Eucalyptus spp. were found to occur across the project site in small and some larger patches. Cosmos bipinnatus was found throughout the site often along road verges but in high densities in some sections, specifically the southern sections of the site.
- Seriphium plumosum (Bankrupt bush), which can be an encroaching species, was found in higher densities in certain sections of the project area.

Natural and undeveloped grassland, rocky outcrops, watercourse and wetlands on the project footprint are considered to be of high sensitivity. Ridges are also considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.

Faunal Assessment Results

The area (specifically where the footprints are proposed) has been transformed based on agricultural activities ranging between pasture and active crop planting (specifically sunflowers, beans and other). Other areas have been found natural and associated with the ridge and riverine areas, with scattered farming activities, Eskom powerstation and sheep or cattle found grazing in these areas during the field assessment. The area on the known reef area have been found mostly natural increasing in condition and sensitivity towards the east.

The larger focus area towards the south, have been found to be mostly agricultural areas and characterised with sunflower fields and or unused areas filled with Bankrupt Bush (Seriphium plumosum).

Species were recorded as sighted, and occurrence verified based on signs and dung.

The areas surveyed focussed mainly on the areas where surface impacts would occur and be focussed, which included the area where data for the reef is available as well as the larger focus area.

Large sections of the area under investigation consisted of secondary (impacted) grassland between the agricultural areas as shown above. Although most of these areas have been transformed and other signs of over or under utilization were visible, sensitive zones do occur as with any grassland associated habitat type.

The faunal investigation provides a description of the ecological diversity in terms of species identification as well as the occurrence of threatened/sensitive species that is dependent on available habitat. During the desktop analysis, it was determined that several Red Data species were listed on the South African National Biodiversity database (SANBI) for the QDS that encompass the specific area.

The most important species of concern that will lead the management is determined to be:

- Species with specialised niches (riverine, ridges or wetland areas);
- Species with large range requirements (grazing mammals);
- Species that have limited adaptation capabilities (such as reptile niches);
- Migrating species (importance of the ecological and aquatic corridor); and
- Species that use the different grassland areas as part of their larger range or preferred habitat (predatory species).
- Sensitive invertebrate species are expected to be associated with the grassland and rocky areas as these represent specialised niches.

No SCC animals were sighted to occur, but the overall most important feature will be the protection of the ridges and water resources, wetlands and remaining natural grasslands within the area, it will by default protect all other endemic, sensitive, and specialised species found to occur within the area. Mole species (specific species unknown) occurred within the ridge areas surveyed, and these areas should be avoided and delineated as a no-go zone (very high sensitivity) to protect it as important habitat for many sensitive and potentially threatened or listed species.

The development should focus on areas where the environment has been impacted (agriculture or other) and keep clear of riverine and ridge areas, which should be avoided.

Since the development is only that of Fifteen (15) boreholes, no significant impacts are expected on sensitive animals if the holes are rehabilitated properly, and the locations are chosen cognisant of sensitive environmental features.

The faunal investigation provides a description of the ecological diversity in terms of species identification as well as the occurrence of threatened/sensitive species that is dependent on available habitat.

It should be noted that several National Species of Conservation Concern (SCC) are thought to occur in the regional area due to the nature of the vegetation and sensitive landscapes found (ridges and riverine sensitive areas) and associated habitat as shown above although not directly observed during the field assessment.

Sensitivities Identified

The objective of a sensitivity mapping exercise is to determine the location and extent of all sensitive areas that must be protected from transforming land uses. Ideally areas which has already been transformed should be utilised for the location of the Fifteen (15) boreholes.

Sections of the study area are situated on areas classed by the GCP as Ecological Support Areas (ESAs) and Critical Biodiversity Areas (CBAs).

The northern-most sections of the project area are situated in the transition zone of the Magaliesberg Biosphere Reserve.

The area in which the project footprint is situated is classified as Highest Biodiversity Importance and Moderate Biodiversity Importance by the Mining Biodiversity Guidelines.

Two (2) species protected in terms of the TNCA were identified to occur on the project area, namely *Cussonia paniculata* (Highveld cabbage tree) and *Protea roupelliae* (Silver sugar bush).

Natural and undeveloped grassland, rocky outcrops, watercourse and wetlands on the project footprint are considered to be of high sensitivity. Ridges are also considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.

Protected Areas, NPAES, IBAs and Other

The Prospecting Right area falls within a small section of the Magaliesberg Important Birding Area

On the BirdLife South Africa database, it is stated that the IBA was previously known as the Magaliesberg and Witwatersberg IBA as this IBA consists mainly of the Magaliesberg range, which

extends in an arc from just north-west of Rustenburg in the west to the N1 in the east near Pretoria. To the south, the Witwatersberg range runs parallel to the Magaliesberg, extending from the town of Magaliesburg in the west to Hartbeespoort Dam in the east.

Environmental Impact Assessment

All forms of development will have an immediate effect on the natural environment. It is therefore of utmost importance to provide information on the environmental consequences these activities will have and to inform the decision-makers thereof.

General impacts Assessed:

The site has sections which ranges between transformed, slightly impacted to natural, however, the onset of prospecting activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact vegetation and on the animals that use the area as habitat.

If ridges cannot be avoided, impacts will occur and could possibly damage the integrity of the areas by the movement of the machinery and fragmentation caused by large machinery trying to get access to the areas if it is located within the ridge or rocky outcrop areas. The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts.

Development related activities may lead to the loss of floral species of conservation concern. Ridges and conservation worthy areas should be avoided and includes Class 1 & Class 2 ridges found on the property, rocky outcrops, the Bloubank River and various of its tributaries as well as tributaries of the Magalies River. This will limit impacts on the natural biodiversity and prevent disturbance of these unique features present. The SCC *Pearsonia bracteata* is classified as Near Threatened (NT) in terms of the SANBI Red List and is considered to have a low likelihood of occurrence on the project area. Two (2) species protected in terms of the TNCA were identified to occur on the project area during the site visit, namely *Cussonia paniculata* (Highveld cabbage tree) and *Protea roupelliae* (Silver sugar bush). The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts.

Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas.

Impacts on the water resources (and potential wetlands) located within and around the area designated for development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly leak from the vehicles and machines used to conduct the drilling.

Continuous rehabilitation and clean-up should take place during the construction and operational phase ensuring the drilled holes have been closed sufficiently and topsoil covered to ensure vegetation growth could recover. However, prospecting is a short-term activity and if done correctly and rehabilitated and filled correctly, impacts will quickly fade. The results may be positive if rehabilitation has been done correctly and the site may be rehabilitated back to a natural landscape. Initial movement around the site to ensure rehabilitation will have similar results as may be expected during the Construction Phase.

Incremental losses and fragmentation of habitat are two of the more serious cumulative impacts in terms of fauna and flora. Given the small scale and low intensity of the activities proposed (15 boreholes per prospecting right), the general focus areas and the nature of the proposed development, and the potential for cumulative impacts are expected to be low.

It was not realistically possible or very difficult to perform an impact assessment for the cumulative impacts based on the available information. The most important aspect related to cumulative impact management for the development, will be to prevent contamination of the surrounding environment and ensure proper rehabilitation of the holes drilled during prospecting.

It is the understanding of the specialist that no bulk sampling or trenching will take place and prospecting activities are limited to drilling of Fifteen (15) holes per prospecting right area. Trenching and bulk sampling will have a more pronounced impact on the environment and therefore the ecology.

- Cultural heritage desktop assessment

The study area: Select portions of the Farms Farms Blaauwbank 505 JQ, Delarey 164 IQ, Delarey 168 IQ, Delarey 171 IQ, Greenway 715 IQ, Malonys Eye 169 IQ, Steenekoppie 153 IQ, Vlakplaats 160 IQ, Wallis Haven 154 IQ, Wolvekrans 156 IQ and Zuikerboschfontein 151 IQ, Magaliesburg, Gauteng

As can be seen from previous research done in the area, the general region is significant from a heritage perspective. Heritage sites are likely to include cemeteries/graves, Stone Age Sites, Iron Age and historical sites. Since gold mining can be dated to at least 1874 on the Farm Blaauwbank that is located directly north of the study area, it can be assumed that similar mining activities took place in the general area during the same time. Remnants of the South African War of 1899 – 1902

are also likely to be encountered within the study area. Since heritage sites, such as burial sites, are not always clearly identifiable due to disturbed/removed surface features, care must be exercised when prospecting.

112 buildings or clusters of buildings were identified, 56 which appear to have been demolished. Four locations associated with graves or cemeteries were identified. The status of these sites, however, could not be determined as no surface indications are visible one aerial imagery.

Forty-four areas associated with huts were identified, while only 13 areas appear to be associated with surface remains.

In four instances historical topographical maps indicate the presence of ruins. On contemporary aerial imagery, however, surface remains are visible at one of the sites only.

The four instances where structures were identified on historical data sources appear to have been demolished as these areas are associated with cultivated fields or open veldt.

One site is indicated as a 'stone wall' on historical topographical maps. Although the site appears to be demolished, a strong possibility exists that the site is intact as the 2006 heritage study by Fourie (2006) recorded the site.

The identified sites dating to 1943, 1944, 1957 and 1961 exceed 60 years of age and are therefore protected by the NHRA 25 of 1999. The sites dating to 1968 and 1976 might not be visible on earlier data sources, which means that these sites might exceed 60 years as well. It should also be noted that demolished sites might be associated with surface/subsurface cultural material remains and would be protected by the NHRA 25 of 1999 as well.

Reasoned Opinion of the EAP

Based on the findings of the basic impact assessment, the EAP is of the opinion that the proposed prospecting be approved, due to the potential positive social and economic impacts it will have on the local and regional communities and the short term, temporary and local impacts associated with prospecting. The potential negative impacts can be mitigated to levels of low and very low significance, provided that the mitigation measures are strictly implemented and monitored. It is, however, recommended, that the sensitive areas as identified by the specialist studies and as indicted in the sensitivity map must be excluded from the prospecting activities, due to the sensitive nature of the habitat and the potential impact on biodiversity. The remaining portions may be utilised for prospecting purposes provided, that all the recommendations of the specialists and mitigation measures provided in the Environmental Management Programme (PART B of this report) are adhered to.

Recommendations

In order to achieve appropriate environmental management standards and ensure that the findings of the environmental studies are implemented through physical measures, the recommendations from the basic assessment report are included within the Environmental Management Programme (EMPr). The EMPr is based on all the information contained within this report as well as all the specialists' reports.

Key specialist recommendations:

- Detailed prospecting map be compiled during the initial non-intrusive phase of prospecting.
- Sensitive areas as identified by specialist must be avoided.
- A suitably qualified specialist (ecologist) to accompany the site manager to demarcate areas for prospecting, in order to avoid damaging sensitive vegetation and fragment fauna migration patterns.
- Care must be taken to reduce impacts on the adjacent properties through the implementation of all the mitigation measures proposed by the specialists.
- No vegetation clearance outside the demarcated areas, except for the removal of alien invasive species will be allowed.
- An Alien and Invasive Species Management Plan must be compiled and implemented.
- Environmental awareness training to all staff and sub-contractors entering the site should be conducted.
- A generic Stormwater Management Plan (SMP) to be developed for the collective area where prospecting will occur, and should include the management of stormwater during excavation, as well as the installation of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area.
- Prior to any development, construction or prospecting, a qualified archaeologist should conduct a site inspection on the areas demarcated for geotechnical drilling/prospecting. Proposed access roads to the drill sites should also be surveyed in order to avoid the destruction of heritage material.
- No prospecting may take place within 500m of a watercourse or wetland.

A variety of mitigation measures have been identified that will serve to mitigate the scale, intensity, duration or significance of the potential negative impacts identified. These include guidelines to be applied during all phases of the proposed prospecting. The EMPr contains detailed mitigation measures for all impacts identified. The proposed mitigation measures, if implemented, will reduce the significance of the majority of the identified impacts.

TABLE OF CONTENTS

TABLE OF FIGURES

LIST OF TABLES

APPENDICES

ABBREVIATIONS

CA	Competent Authority
CBA	Critical Biodiversity Area
CoJ	City of Johannesburg
CoT	City of Tshwane
CSA	Constitution of South Africa (Act No. 108 of 1996)
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DTM	Dimensional Terrain Modelling
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
ESA	Ecological Support Area
ESM	Environmental Site Manager
GDARD	Gauteng Department of Agriculture and Rural Development
GDP	Gross Domestic Product
GEMF	Gauteng Environmental Management Framework
GN	Government Notice
GIS	Geographic Information System
GPS	Global Positioning System
GVA	Gross Value Added
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
Mamsl	Metres above mean sea level
MHSA	Mine Health and Safety Act (Act No. 29 of 1996) [as amended]
MPRDA	Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) (as amended)
NEMA	National Environmental Management Act, 1998 (Act no 107 of 1998) (as amended)
NEMAQA	National Environmental Management: Air Quality Act (Act No. 39 of 2004) (as amended)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

NEMWA	National Environmental Management: Waste Act (Act No. 59 of 2008) (as amended)
NHRA	National Heritage Resource Act, 1999 (Act No. 25 of 1999)
NVFFA	National Veld and Forest Fire Act (Act No. 101 of 1998)
NWA	National Water Act, 1998 (Act No. 36 of 1998) (as amended)
PGMs	Platinum Group Metals
PM	Public Meeting
PPE	Personal Protective Equipment
PPP	Public Participation Process
ROM	Run of Mine
RWD	Return Water Dam
SAHRA	South African Heritage Resources Agency
SANS	South African National Standards
SAWS	South African Weather Service
SDF	Spatial Development Framework
SLP	Social and Labour Plan
SM	Site Manager
tpm	tonne per month
VAC	Visual Absorption Capacity

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable, or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

Objective of the basic assessment process

The objective of the basic assessment process is to, through a consultative process–

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context.

(b) identify the alternatives considered, including the activity, location, and technology alternatives.

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:

(i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and

(ii) the degree to which these impacts—

(aa) can be reversed.

(bb) may cause irreplaceable loss of resources; and

(cc) can be managed, avoided or mitigated.

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—

(i) identify and motivate a preferred site, activity and technology alternative.

(ii) identify suitable measures to manage, avoid or mitigate identified impacts; and

(iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSSSMENT AND BASIC ASSESSMENT REPORT

1. Contact Person and correspondence address

a) Details of:

i) The EAP who prepared the report

Name of The Practitioner: Corrie Retief

Cell : 0828522134
e-mail address: dutoit@elemental-s.co.za or corlien@elemental-s.co.za

Corrie Retief was contracted as an Independent Environmental Practitioner by Elemental Sustainability.

ii) Expertise of the EAP

(1) The qualifications of the EAP

(With evidence attached as Appendix 1)

- University of South Africa, BA Hons Geography - 2007
- University of South Africa, BA Environmental - 2005
- Registerd EAP with EAPASA
- Pri.Sci.Nat Registerd with SACNASP

(2) Summary of the EAP's past experience.

(Attach the EAP's curriculum vitae as Appendix 2)

Corrie Retief is an Environmental Scientist with more than 15 years of experience in applying the principles of Integrated Environmental Management, and in applying the Environmental Legislation to a number of development projects and initiatives in Southern Africa. He has co-ordinated and managed a number of diverse projects and programs related to the Environment and Waste within both the public and private sectors for national, multi-national and international companies. His interpersonal and organisational skills have enabled him to efficiently direct these projects from initiation to implementation. Furthermore his training in sustainability and sustainable project delivery has helped him to deliver profitable sustainability into customers operations throughout the asset lifecycle.

A significant element of public participation is required throughout the life cycle of an EIA process. Corrie has successfully liaised with interested and affected parties, ensuring that all communication procedures and dialogues are open and transparent, and that capacity building is conducted where necessary. His proficient report-writing skills have been utilised for the compilation of a wide variety of reports, which include but is not limited to Basic Assessment Reports, Scoping and Environmental Impact Assessment Reports, Environmental Management Plans (Planning, Construction, Operation and Closure), Environmental Audit Reports, Opportunities and Constraints Analyses, Feasibility studies, Waste License Applications, Water-Use Application Reports and Mining Right Applications.

The EAP has experience in the following disciplines:

- Environmental risk assessments;
- Environmental site screening, investigation and evaluations;
- Environmental legal screenings;
- Environmental feasibility studies;
- Environmental impact assessments;
- Basic assessments;
- Environmental compliance auditing;
- Compilation, implementation and monitoring of environmental management plans;
- Waste Management;
- Waste Disposal site selection screenings;
- Waste license applications;
- Water-Use License Applications;
- Mining Right applications; and
- Managing and facilitating public participation.

2. Location of the overall Activity

Table 1: Location of the Overall Activity

Farm Name:	RIGHT NUMBER	Properties
	GP30/5/1/1/2(10668)PR GP30/5/1/1/2(10657)PR GP30/5/1/1/2(10669)PR	Portions 15, 59, 63 & 64 of Kaalfontein 44 Portions 1, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 44, 45, 46, 47, 48, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87 & amp; 110 of Wolwekrans 156 Portions 7, 19, 16, 17, 19, 22, 24, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 50, 53, 54 of Delarey 164 Portions 1, 3 of Delarey 168; Portions RE, 1, 2 & 3 of Delarey 171 Portions RE, 9, 10, 11, 12, 13, 20, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, ,138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 201, 202, 267, 268, & 291 of Farm Vlakplaats 160; Farm Wallis Haven 154; Portions RE, 3, 4 & 6 of Malony`s Eye 169; 10, 44, 45, 82, 52, 81 of Farm Steenekoppie 153
Application area (Ha)	Total Area approximately 8,475.41 hectares	
Magisterial district:	Mogale City	
Distance and direction from nearest town	The study area is located roughly 2.5 km southwest of Magaliesburg, 26 km west of Krugersdorp and 30 km north-northeast of Carletonville	
21-digit Surveyor General Code for each farm portion	T0IQ00000000015100036, T0IQ00000000031500036, T0IQ00000000015300036, T0IQ00000000015300010, T0IQ00000000015300044, T0IQ00000000015300045, T0IQ00000000015300052, T0IQ00000000015300081 T0IQ00000000015300082, T0IQ00000000015300101, T0IQ00000000015400000, T0IQ00000000015600001 T0IQ00000000015600009, T0IQ00000000015600010, T0IQ00000000015600011, T0IQ00000000015600012, T0IQ00000000015600013, T0IQ00000000015600014, T0IQ00000000015600015, T0IQ00000000015600016, T0IQ00000000015600017, T0IQ00000000015600018 T0IQ00000000015600019, T0IQ00000000015600020 T0IQ00000000015600021, T0IQ00000000015600022 T0IQ00000000015600044, T0IQ00000000015600045, T0IQ00000000015600046, T0IQ00000000015600047, T0IQ00000000015600048, T0IQ00000000015600064 T0IQ00000000015600065, T0IQ00000000015600066 T0IQ00000000015600067, T0IQ00000000015600068 T0IQ00000000015600069, T0IQ00000000015600070 T0IQ00000000015600071, T0IQ00000000015600072 T0IQ00000000015600073, T0IQ00000000015600074, T0IQ00000000015600075, T0IQ00000000015600076 T0IQ00000000015600077, T0IQ00000000015600078 T0IQ00000000015600079, T0IQ00000000015600080 T0IQ00000000015600081, T0IQ00000000015600082 T0IQ00000000015600083, T0IQ00000000015600084, T0IQ00000000015600085, T0IQ00000000015600086 T0IQ00000000015600087, T0IQ00000000015600090, T0IQ00000000015600110, T0IQ00000000015600111 T0IQ00000000016000001, T0IQ00000000016000009	

	T0IQ00000000016000010, T0IQ00000000016000011 T0IQ00000000016000012, T0IQ00000000016000013 T0IQ00000000016000020, T0IQ00000000016000125, T0IQ00000000016000126, T0IQ00000000016000127 T0IQ00000000016000128, T0IQ00000000016000129 T0IQ00000000016000130 T0IQ00000000016000131 T0IQ00000000016000132, T0IQ00000000016000133 T0IQ00000000016000134, T0IQ00000000016000135 T0IQ00000000016000136, T0IQ00000000016000137, T0IQ00000000016000138, T0IQ00000000016000139 T0IQ00000000016000140, T0IQ00000000016000141 T0IQ00000000016000142, T0IQ00000000016000143 T0IQ00000000016000144, T0IQ00000000016000145 T0IQ00000000016000146, T0IQ00000000016000147 T0IQ00000000016000148, T0IQ00000000016000149 T0IQ00000000016000150, T0IQ00000000016000151 T0IQ00000000016000194, T0IQ00000000016000201 T0IQ00000000016000202, T0IQ00000000016000267 T0IQ00000000016000291, T0IQ00000000016000292 T0IQ00000000016000293, T0IQ00000000016400007 T0IQ00000000016400016, T0IQ00000000016400017 T0IQ00000000016400019, T0IQ00000000016400022 T0IQ00000000016400029, T0IQ00000000016400030 T0IQ00000000016400031, T0IQ00000000016400032 T0IQ00000000016400033, T0IQ00000000016400034 T0IQ00000000016400035, T0IQ00000000016400036 T0IQ00000000016400037, T0IQ00000000016400038, T0IQ00000000016400039, T0IQ00000000016400040 T0IQ00000000016400041, T0IQ00000000016400042 T0IQ00000000016400043, T0IQ00000000016400044 T0IQ00000000016400045, T0IQ00000000016400046 T0IQ00000000016400047, T0IQ00000000016400050 T0IQ00000000016400053, T0IQ00000000016400054, T0IQ00000000016400055, T0IQ00000000016400056 T0IQ00000000016800000, T0IQ00000000016800001 T0IQ00000000016800003, T0IQ00000000016900000 T0IQ00000000016900003, T0IQ00000000016900004 T0IQ00000000016900006, T0IQ00000000016900012 T0IQ00000000016900014, T0IQ00000000017100000, T0IQ00000000017100001, T0IQ00000000017100002 T0IQ00000000017100003, T0IQ00000000017500000 T0IQ00000000050500000, T0IQ00000000050500001 T0IQ00000000050500066, T0IQ00000000050500068

3. Locality map

(show nearest town, scale not smaller than 1:250000)

Refer to Appendix 3 for the locality map.

4. Description of the scope of the proposed overall activity

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.

(i) Listed and specified activities

Table 2: Listed and specified activities

NAME OF ACTIVITY (All activities including activities not listed)	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (*GNR 983, GNR 984 or GNR 985 /NOT LISTED*	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act)
OPERATIONAL PHASE				
• Clearing of vegetation and topsoil.	Less than 1 hectare in total	-	NOT LISTED	NOT LISTED
• Stockpiling of overburden positioned for later rehabilitation.	Less than 1 hectare in total	-	NOT LISTED	NOT LISTED
• Prospecting.	Less than 1 hectare in total.	X	Listing Notice 1 Activity 20	NOT LISTED
• Dust Suppression.	Extent of dirt roads open, non-paved areas.		NOT LISTED	NOT LISTED

(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

Background

Cold Gold (Pty) Ltd is applying for a Prospecting Right without bulk sampling, to prospect the following types of minerals:

- Gold and Silver.

The area demarcated for the prospecting is approximately 7,525.64ha (refer to Table 3 and Figure 1). It is estimated that 15 holes will be drilled for each of the prospecting rights.

Table 3: Property name & coordinates

Property	Portion	Map Reference (1:50 000)	Lat (y)	Lon (x)	Extent (ha)
Zuikerboschfontein 151 IQ	26/151	2627BA	-26.015174	27.526431	237.73
Zuikerboschfontein 151 IQ	27/151	2527DC	-26.006515	27.522471	213.74
Steenekoppie 153 IQ	RE/10/153	2627BA	-26.006518	27.535638	31.07
Steenekoppie 153 IQ	44/153	2627BA	-26.006823	27.539281	34.38
Steenekoppie 153 IQ	45/153	2527DC &	-26.004787	27.54638	86.98
Steenekoppie 153 IQ	52/153	2627BA	-26.017472	27.554832	179.06
Steenekoppie 153 IQ	81/153	2627BA	-26.022728	27.55357	60.24
Steenekoppie 153 IQ	82/153	2627BA	-26.013195	27.547276	200.15
Steenekoppie 153 IQ	100/153	2627BA	-26.002722	27.533094	7.28
Steenekoppie 153 IQ	101/153	2627BA	-26.007252	27.535102	1.61
Wallis Haven 154 IQ	154	2627BA	-26.037498	27.585141	97.70

Wolvekrans 156 IQ	1/156	2627BA	-26.073005	27.562122	2015.16
Wolvekrans 156 IQ	9/156	2627BA	-26.056476	27.590104	9.03
Wolvekrans 156 IQ	10/156	2627BA	-26.056849	27.587746	9.03
Wolvekrans 156 IQ	11/156	2627BA	-26.059405	27.590946	9.03
Wolvekrans 156 IQ	12/156	2627BA	-26.059862	27.588057	9.03
Wolvekrans 156 IQ	13/156	2627BA	-26.06187	27.591654	9.03
Wolvekrans 156 IQ	14/156	2627BA	-26.062398	27.588319	9.03
Wolvekrans 156 IQ	15/156	2627BA	-26.064041	27.592278	9.03
Wolvekrans 156 IQ	16/156	2627BA	-26.064631	27.58855	9.03
Wolvekrans 156 IQ	17/156	2627BA	-26.066004	27.592842	9.03
Wolvekrans 156 IQ	18/156	2627BA	-26.06665	27.588759	9.03
Wolvekrans 156 IQ	19/156	2627BA	-26.068959	27.588287	9.29
Wolvekrans 156 IQ	20/156	2627BA	-26.069293	27.591229	9.80
Wolvekrans 156 IQ	21/156	2627BA	-26.069096	27.593523	9.38
Wolvekrans 156 IQ	22/156	2627BA	-26.068898	27.595333	9.19
Wolvekrans 156 IQ	44/156	2627BA	-26.075353	27.592492	8.86
Wolvekrans 156 IQ	45/156	2627BA	-26.073106	27.595026	8.85
Wolvekrans 156 IQ	46/156	2627BA	-26.072574	27.592953	8.65
Wolvekrans 156 IQ	47/156	2627BA	-26.071963	27.590434	8.69
Wolvekrans 156 IQ	48/156	2627BA	-26.0719	27.587884	8.70
Wolvekrans 156 IQ	64/156	2627BA	-26.050854	27.57775	9.12
Wolvekrans 156 IQ	65/156	2627BA	-26.050988	27.580789	8.60
Wolvekrans 156 IQ	66/156	2627BA	-26.051145	27.584359	9.29
Wolvekrans 156 IQ	67/156	2627BA	-26.053033	27.578836	8.88
Wolvekrans 156 IQ	68/156	2627BA	-26.05298	27.58391	9.13
Wolvekrans 156 IQ	69/156	2627BA	-26.054627	27.578857	8.88
Wolvekrans 156 IQ	70/156	2627BA	-26.054574	27.58393	9.13
Wolvekrans 156 IQ	71/156	2627BA	-26.056222	27.578878	8.88
Wolvekrans 156 IQ	72/156	2627BA	-26.056168	27.583951	9.13
Wolvekrans 156 IQ	73/156	2627BA	-26.057816	27.578898	8.88
Wolvekrans 156 IQ	74/156	2627BA	-26.057762	27.583971	9.13
Wolvekrans 156 IQ	75/156	2627BA	-26.05941	27.578918	8.88
Wolvekrans 156 IQ	76/156	2627BA	-26.059357	27.583992	9.13
Wolvekrans 156 IQ	77/156	2627BA	-26.061004	27.578939	8.88
Wolvekrans 156 IQ	78/156	2627BA	-26.060951	27.584013	9.13
Wolvekrans 156 IQ	79/156	2627BA	-26.062598	27.57896	8.88
Wolvekrans 156 IQ	80/156	2627BA	-26.062545	27.584033	9.13
Wolvekrans 156 IQ	81/156	2627BA	-26.064192	27.57898	8.87
Wolvekrans 156 IQ	82/156	2627BA	-26.064138	27.584054	9.13
Wolvekrans 156 IQ	83/156	2627BA	-26.065786	27.579001	8.88
Wolvekrans 156 IQ	84/156	2627BA	-26.065733	27.584074	9.14
Wolvekrans 156 IQ	85/156	2627BA	-26.067588	27.57861	8.84
Wolvekrans 156 IQ	86/156	2627BA	-26.067807	27.582183	8.95
Wolvekrans 156 IQ	87/156	2627BA	-26.068033	27.585246	9.90
Wolvekrans 156 IQ	90/156	2627BA	-26.070557	27.584412	11.03
Wolvekrans 156 IQ	110/156	2627BA	-26.044416	27.578727	138.45
Wolvekrans 156 IQ	111/156	2627BA	-26.051531	27.587953	25.27
Vlakplaats 160 IQ	1/160	2627BA	-26.071898	27.639788	19.93
Vlakplaats 160 IQ	9/160	2627BA	-26.071896	27.617694	18.08
Vlakplaats 160 IQ	10/160	2627BA	-26.071689	27.624857	39.81
Vlakplaats 160 IQ	11/160	2627BA	-26.073756	27.638268	3.93
Vlakplaats 160 IQ	12/160	2627BA	-26.069771	27.635598	22.38
Vlakplaats 160 IQ	13/160	2627BA	-26.067146	27.638754	0.77

Vlakplaats 160 IQ	20/160	2627BA	-26.071671	27.633853	26.38
Vlakplaats 160 IQ	125/160	2627BA	-26.062074	27.630043	8.75
Vlakplaats 160 IQ	126/160	2627BA	-26.066121	27.630849	8.81
Vlakplaats 160 IQ	127/160	2627BA	-26.061713	27.631859	8.44
Vlakplaats 160 IQ	128/160	2627BA	-26.065834	27.632683	8.42
Vlakplaats 160 IQ	129/160	2627BA	-26.061443	27.633679	8.62
Vlakplaats 160 IQ	130/160	2627BA	-26.065529	27.634488	8.55
Vlakplaats 160 IQ	131/160	2627BA	-26.06115	27.63551	8.57
Vlakplaats 160 IQ	132/160	2627BA	-26.065243	27.636326	8.77
Vlakplaats 160 IQ	133/160	2627BA	-26.060829	27.637339	8.59
Vlakplaats 160 IQ	134/160	2627BA	-26.0649	27.638155	8.63
Vlakplaats 160 IQ	135/160	2627BA	-26.05979	27.639678	9.14
Vlakplaats 160 IQ	136/160	2627BA	-26.062033	27.640522	9.20
Vlakplaats 160 IQ	137/160	2627BA	-26.063932	27.641157	8.91
Vlakplaats 160 IQ	138/160	2627BA	-26.065646	27.641536	8.62
Vlakplaats 160 IQ	139/160	2627BA	-26.064595	27.615122	8.53
Vlakplaats 160 IQ	140/160	2627BA	-26.068906	27.615075	9.04
Vlakplaats 160 IQ	141/160	2627BA	-26.068431	27.616954	9.10
Vlakplaats 160 IQ	142/160	2627BA	-26.064177	27.616921	8.62
Vlakplaats 160 IQ	143/160	2627BA	-26.068128	27.618845	8.86
Vlakplaats 160 IQ	144/160	2627BA	-26.06386	27.61873	8.70
Vlakplaats 160 IQ	145/160	2627BA	-26.067788	27.620727	9.01
Vlakplaats 160 IQ	146/160	2627BA	-26.063584	27.620547	8.54
Vlakplaats 160 IQ	147/160	2627BA	-26.067501	27.622636	9.01
Vlakplaats 160 IQ	148/160	2627BA	-26.06329	27.622354	8.53
Vlakplaats 160 IQ	149/160	2627BA	-26.067133	27.62449	8.56
Vlakplaats 160 IQ	150/160	2627BA	-26.06332	27.624291	8.46
Vlakplaats 160 IQ	151/160	2627BA	-26.067066	27.626446	9.05
Vlakplaats 160 IQ	194/160	2627BA	-26.074054	27.620493	10.72
Vlakplaats 160 IQ	201/160	2627BA	-26.071684	27.629359	10.31
Vlakplaats 160 IQ	202/160	2627BA	-26.073413	27.631844	9.24
Vlakplaats 160 IQ	267/160	2627BA	-26.072786	27.642309	70.32
Vlakplaats 160 IQ	291/160	2627BA	-26.074093	27.634073	5.41
Vlakplaats 160 IQ	292/160	2627BA	-26.062794	27.625215	1.68
Vlakplaats 160 IQ	293/160	2627BA	-26.066664	27.627497	1.53
Delarey 164 IQ	7/164	2627BA	-26.058618	27.59796	208.44
Delarey 164 IQ	16/164	2627BA	-26.069868	27.605766	10.27
Delarey 164 IQ	17/164	2627BA	-26.069873	27.608659	20.11
Delarey 164 IQ	19/164	2627BA	-26.069805	27.599636	21.13
Delarey 164 IQ	22/164	2627BA	-26.069899	27.612072	20.44
Delarey 164 IQ	29/164	2627BA	-26.060105	27.621683	7.71
Delarey 164 IQ	30/164	2627BA	-26.059522	27.606192	9.03
Delarey 164 IQ	31/164	2627BA	-26.061364	27.605755	8.18
Delarey 164 IQ	32/164	2627BA	-26.063189	27.605245	8.90
Delarey 164 IQ	33/164	2627BA	-26.065034	27.604807	8.48
Delarey 164 IQ	34/164	2627BA	-26.06686	27.604336	8.77
Delarey 164 IQ	35/164	2627BA	-26.06637	27.608376	8.47
Delarey 164 IQ	36/164	2627BA	-26.064212	27.608872	8.58
Delarey 164 IQ	37/164	2627BA	-26.061961	27.60936	8.81
Delarey 164 IQ	38/164	2627BA	-26.059421	27.609631	8.44
Delarey 164 IQ	39/164	2627BA	-26.058861	27.612391	8.69
Delarey 164 IQ	40/164	2627BA	-26.061549	27.612584	8.77
Delarey 164 IQ	41/164	2627BA	-26.063938	27.612457	8.50

Delarey 164 IQ	42/164	2627BA	-26.066084	27.612041	8.52
Delarey 164 IQ	43/164	2627BA	-26.058374	27.61509	8.73
Delarey 164 IQ	44/164	2627BA	-26.060989	27.615625	8.49
Delarey 164 IQ	45/164	2627BA	-26.060484	27.618714	8.67
Delarey 164 IQ	46/164	2627BA	-26.057949	27.617763	8.39
Delarey 164 IQ	47/164	2627BA	-26.057682	27.620292	7.61
Delarey 164 IQ	50/164	2627BA	-26.069796	27.603588	10.18
Delarey 164 IQ	53/164	2627BA	-26.038927	27.595118	238.81
Delarey 164 IQ	54/164	2627BA	-26.048739	27.597369	105.20
Delarey 164 IQ	55/164	2627BA	-26.059778	27.62321	1.00
Delarey 164 IQ	56/164	2627BA	-26.057233	27.621553	1.22
Delarey 168 IQ	RE/168	2627BA	-26.03135	27.615283	217.32
Delarey 168 IQ	1/168	2627BA	-26.040712	27.617724	252.06
Delarey 168 IQ	3/168	2627BA	-26.048637	27.606744	120.45
Malonys Eye 169 IQ	RE/169	2627BA	-26.019923	27.573958	228.33
Malonys Eye 169 IQ	3/169	2627BA	-26.030419	27.579058	188.76
Malonys Eye 169 IQ	4/169	2627BA	-26.023139	27.563766	53.14
Malonys Eye 169 IQ	6/169	2627BA	-26.034092	27.559499	490.49
Malonys Eye 169 IQ	12/169	2627BA	-26.024564	27.587773	0.20
Malonys Eye 169 IQ	14/169	2627BA	-26.010196	27.577492	165.80
Delarey 171 IQ	RE/171	2627BA	-26.050509	27.626286	144.30
Delarey 171 IQ	1/171	2627BA	-26.049706	27.612926	108.97
Delarey 171 IQ	2/171	2627BA	-26.053017	27.618702	2.68
Delarey 171 IQ	3/171	2627BA	-26.049511	27.616364	0.26
Greenway 715 IQ	715	2627BA	-26.080673	27.623665	155.12
Blaauwbank 505 JQ	RE/505	2527DC &	-25.997557	27.538783	56.76
Blaauwbank 505 JQ	1/505	2627BA	-26.001888	27.537811	10.32
Blaauwbank 505 JQ	66/505	2627BA	-26.00137	27.544494	1.72
Blaauwbank 505 JQ	68/505	2527DC &	-26.000234	27.544221	4.68

Prospecting work will initially entail a high-level desktop study and potential desktop resource evaluation. This will include a data search of any previous drilling, sampling activities, exploration activities, existing maps and relevant historical data. On successful completion of this desktop study, further possible exploration drilling and resource estimations will be performed if the results warrant it.

Prospecting Method:

- Planned non-invasive activities

Desktop studies to be undertaken over the area would include studying of geological reports, prospecting data, plans/maps, aerial photographs, topography maps and any other related geological information about this area.

- Planned invasive activities

Diamond core drilling is planned to be executed on a phase-by-phase basis. Planned borehole depths will be determined during the desktop study, but it is estimated that drilling activities will be done down

to relatively shallow depths. Logging and sampling of the borehole core will be performed to evaluate the area.

- Pre-feasibility studies

Geological modelling of gathered existing geological data and prospecting data will be performed, if the results warrant it

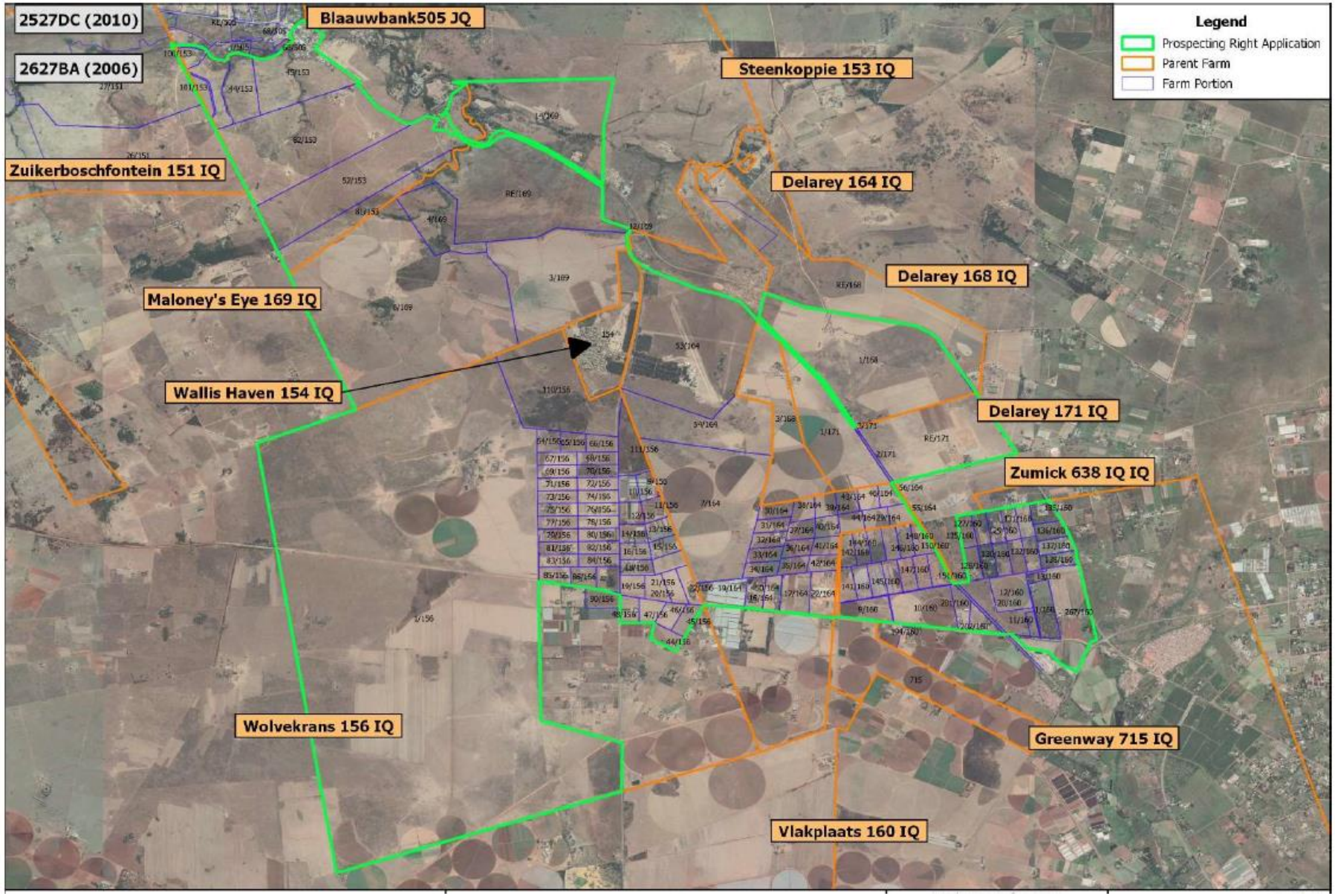

Figure 1: Farm Portions of the Study Area

5. Policy and Legislative Context

Table 4: Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**
Constitution of South Africa, 1996 (Act No. 108 of 1996) [as amended] • *Section 24* *Environment. -Everyone has the right-* *(a) to an environment that is not harmful to their health or well-being; and* *(b) to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that-* *i) prevent pollution and ecological degradation.* *ii) promote conservation; and* *Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*	The proposed activity has the potential to harm the environment and poses a risk to the health and wellbeing of people. The Applicant has the overall responsibility to ensure that the rights of people in terms of Section 24 of the Constitution is protected in terms of the proposed prospecting activity.
National Environmental Management Act (No. 107 of 1998) [as amended] • *Section 24* *Environmental Authorisations* • *Section 28 (1)* *Duty of Care and responsibilities to minimise and remediate environmental degradation.*	The proposed activity is a listed activity in terms of the EIA Regulations and requires environmental authorisation. Overall responsibility of the prospecting rests with the Applicant, especially in terms of liabilities associated with the operational phase.
EIA Regulations, 2014 (Government Notices 982 and 984) [as amended in 2017] *Chapter 2: Timeframes for EIA processes* *Chapter 3: Duties of proponent* *Chapter 4: Application for Environmental Authorisation:* *Part 2: Basic Assessment* *Part 4: Environmental Authorisation* *Chapter 6: Regulation 39 to 44: Public Participation* *Appendix 1: Basic Assessment Report* *Appendix 4: Environmental Management Programme* *Appendix 6: Specialist Reports*	The EIA Regulations, 2014 [as amended] prescribes *inter alia*: the manner in which public participation needs to be conducted as well as the requirements of a basic assessment process and content of a basic assessment report, Environmental Management Programme and specialist reports.
Screening Tool	In accordance with the Screening tool the following sensitivities was identified:

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**
On 5 July 2019, the Minister of Environmental Forestry and Fisheries published a notice requiring that when submitting an application for environmental authorisation in terms of regulation 19 and 21 of the Environmental impact Assessment Regulations, 2014 (as amended) (the EIA regulations), the applicant must submit the report generated by the National Web Base Screening Tool ("The Screening Tool") with the application.	• Agriculture Theme – Very High Sensitive • Animal Species Theme – High Sensitive • Aquatic Biodiversity Theme - Very High Sensitive • Archaeological and Cultural Heritage Theme - High Sensitive • Civil Aviation Theme - High Sensitive • Paleontological Theme - Very High Sensitive • Plant Species Theme – Medium Sensitivity • Terrestrial Biodiversity Theme - Very High Sensitive The Screening Report is attached as **Appendix 5** As the application is only for core-drilling prospecting, the following specialist studies were undertaken. • Wetland Desktop Assessment • Archaeological and Cultural Heritage Desktop Assessment • Biodiversity impact assessment • Closure Cost Assessment
Mineral and Petroleum Resources Development Act, 2002 (Act. 28 of 2002) [as amended]: *Chapter 2 (5): Legal nature of a prospecting right;* *Chapter 4: Mineral and Environmental Regulation* *(9) Order of processing of applications* *(10) Consultation with Interested and Affected Parties;* *(16 – 19) Prospecting right application.* *(37) Environmental Management Principles*	The application is for a prospecting right and therefore all regulations pertaining to the application process of a prospecting right and environmental management is application to this application.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [as amended] • *Section 16* *General duty in respect of waste management.* • *Section 17.* *Reduction, re-use, recycling and recovery of waste.* • *Section 21*	The proposed activities will produce general and hazardous waste which need to be managed and disposed of according to best practices such as recycling, safe storage, etc.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**
General requirements for storage of hazardous and general waste.	
National Water Act, 1998 (Act No. 36 of 1998) [as amended] • *Section 3* *Regulation of flow and control of all water* • *Section 19* *Prevention of pollution to watercourses*	Stormwater need to be managed properly in order to achieve prevention of pollution and hazards.
Mine Health and Safety Act, 1996 (Act No. 29 of 1996) [as amended] and associated regulations • *Chapter 2, Sections 2 – 4* *Responsibilities of owner* • *Chapter 2, Sections 5 – 13* *Responsibilities of manager.* • *Chapter 2, Sections 14 – 18.* *Documentation requirements.* • *Chapter 2, Section 19 – 20 and 22 to 24* *Employee's rights and duties; and* • *Chapter 2, Section 21* *Manufacturers and supplier's duty for health and safety*.	The development activities will create an environment that may not be safe and healthy for workers on and visitors to the site. The act provides for measures to prevent threats to the health and safety of humans in the development area.
National Heritage Resources Act, 1999 (Act No. 25 of 1999) • *Section 38* *Statutory Comments to be obtained from the South African Heritage Resources Agency (SAHRA)* • *Section 44 (1).* *Preservation and protection of heritage resources.* • *Section 3 Types and ranges of heritage resources (i) (i).* *Objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens*.	Protection of indigenous heritage resources that may potentially occur on the property. A cultural heritage desktop assessment was conducted in 2021 by Tobias Coetzee. The specialist concluded that the general region is significant from a heritage perspective. Heritage sites are likely to include graveyards, Iron Age/Farmer and Historical remains. Since heritage sites, e.g., graves, are not always clearly identifiable as it might consist of stone cairns, it is advised that a qualified archaeologist inspect the proposed prospecting sites prior to drilling to establish whether the sites might be sensitive from a heritage perspective. Comments to be obtained from SAHRA on the Draft BAR and EMPr and cultural heritage desktop assessment.
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) [as amended] • *Section 32* *Control of dust* • *Section 34* *Control of noise*	Impacts on surrounding landowners need to be managed through dust and noise monitoring and mitigation measures.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**
National Dust Control Regulations, 2013 (Government Notice 827 of 2013) • *Section 3* *Dust fall standard* • *Section 4* *Dust falls monitoring program* • *Section 6* *Measures for control of dust* • *Section 7* *Ambient air quality monitoring (PM10)* • *Section 8* *Offences* • *Section 9* *Penalties*	Dust fallout need to be monitored in accordance to the standards set out in the monitoring programme with the specified measures. This is a result of the Applicant being liable to offences and penalties associated with non-conformance to dust which may influence employees and surrounding landowners.
Veld and Forest Fire Act, 1998 (Act No. 101 of 1998) [as amended] • *Section 12 (1)* *Duty of the landowner to prevent fire from spreading to neighbouring properties.*	Cautionary steps in avoiding the spread of fires to and from neighbouring properties.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) [as amended] • *Section 9* *Norms and standards* • *Section 27* *Delegation of power and duties* • *Section 30* *Financial accountability* • *Section 43* *Biodiversity management plans.*	Indigenous vegetation need to be protected and managed in accordance with management measures set out in the management plans developed for the proposed activity. The Applicant need to ensure he is aware of and covers his liabilities.
(Government Notice 609 of 2017) Notice of the List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998).	It is the responsibility of the Applicant to avoid unnecessary removal of protected tree species. Should protected tree species need to be removed, a permit must be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF).
Alien and Invasive Species Regulations (Government Notice 598 of 2014) and Alien and Invasive Species List, 2016 in terms of NEMBA (Government Notice 864 of 2016)	It is the responsibility of the Applicant to ensure that all prohibited plant and animal species are eradicated as far as possible.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**
• *Notice 2* *Exempted Alien Species in terms of Section 66 (1)* • *Notice 3* *National Lists of Invasive Species in terms of Section 70(1) – List 1, 3-6 8 & 11* • *Notice 4* *Prohibited Alien Species in terms of Section 67 (1) – List 1, 3-6, 9 & 12*	
Conservation of Agricultural Resources Act (no. 43 of 1983) • *Section 5* *Prohibition of spreading of weeds* • *Section 12* *Maintenance of soil conservation works and maintenance of certain states of affairs* • *Section 16* *Regional Conservation Committees*	Listed invader/alien plants occurring on site which requires management measures to be implemented to strive to maintain the status quo environment, especially through the guidelines provided by the Regional Conservation Committee.
Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended] • *Section 2* *Declaration of grouped hazardous substances.* • *Section 4* *Licensing.* • *Section 16* *Liability of employer or principle* • *Section 9 (1)* *Storage and handling of hazardous chemical substances* • *Section 18* *Offences*	The Applicant must ensure the safety of people working with hazardous chemicals (specifically fuels), as well as safe storage, use and disposal of containers during the on-site operational phase together with the associated liability should non-compliance be at the order of the day.
Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995) • *Section 4* *Duties of persons who may be exposed to hazardous chemical substances* • *Section 9A (1)* *Penalties*	Hazardous substances will be stored and utilised on the site and non-compliance to management measures will result in prosecution of the Applicant in terms of his liabilities to the socio-economic environment.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**
NEMA: Government Notice. 805 Companion Guideline on the Implantation of the Environmental Impact Assessment Regulations, 2010, October 2012.	The application for Environmental Authorisation is submitted in terms of the EIA Regulations.
NEMA: GN. 807 Public Participation Guideline, October 2012	Consultation with Interested and Affected Parties and Communities.
Public Participation guideline in terms of NEMA EIA Regulations, Department of Environmental Affairs, 2017	This guideline has informed the public participation process for the project. Public Participation for the project has been undertaken in terms of the guideline and other relevant requirements.
Guideline on the Need and Desirability, Department of Environmental Affairs, 2017	This guideline has been taken into account as part of project planning. The 2017 Guideline has been used within this process. The Need and Desirability of the project is motivated based on the requirements of the guideline.
National Development Plan 2030 (2012)	Land uses
National Framework for Sustainable Development (2008)	Land uses
National Strategy for Sustainable Development and Action Plan 2011 – 2014 (NSSD 1) (2011)	Land uses
Mogale City Local Municipality (SDF)	Land uses
Gauteng Spatial Development Plan (SDP)	Land uses
Department of Mineral Resources Guidelines for the compilation of a Scoping Report with due regard to consultation with communities and Interested and Affected Parties.	Consultation with Interested and Affected Parties and Communities.
Mining and Biodiversity Guideline: Mainstreaming biodiversity into the mining sector (2013) (Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, South African Mining and Biodiversity Forum, and South African National Biodiversity Institute.	The Guideline provides guidance on the impacts on biodiversity typically associated with prospecting as well as mitigation measures and strategies. The guideline is taken into consideration in this EIA and the development of the Environmental Management Programme.
Development Guidelines for Ridges (GDARD)	Ridges have been identified and delineated within the Gauteng Province by GDARD. Ridges and conservation worthy areas have been identified which includes Class 1 & Class 2 ridges found on the properties, rocky outcrops, the Bloubank River and various of its tributaries as well as tributaries of the Magalies River.
Magaliesberg Biosphere Proposed Management Plan	Guidelines for activities and land uses within the biosphere.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**
Magaliesberg Protected Environment: Environmental Management Framework and Plan	Guidelines for activities and land uses within the biosphere.
SANS 10103:2008 The Measurement and Rating of Environmental Noise with Respect to Land Use, Health, and Annoyance and to Speech Communication.	Impacts on surrounding landowners need to be managed through noise mitigation measures.
SANS 1929: Ambient Air Quality – Limits for Common Pollutants	Impacts on surrounding landowners need to be managed through dust mitigation measures.
SANS 1137: Standard test method for the collection and measurement of dust fall (settleable particulate matter).	Impacts on surrounding landowners need to be managed through dust mitigation measures.
SANS 10234: 2008 Globally Harmonised Systems of classification and labelling of chemicals (GHS) Government Notice 634. August 2013: Waste Classification	All dangerous goods on site need to be managed according to these standards.
SANS 10228:2006 The Identification and Classification of Dangerous Goods for Transport	All dangerous goods to be transported to and from the site need to be managed according to these standards.
ASTM d 1739, 1970 or equivalent approved protocol for dust monitoring.	Impacts on surrounding landowners need to be managed through dust mitigation measures.
All other relevant national, provincial, district and local municipality legislation and guidelines that may be applicable to the application.	

6. Need and desirability of the proposed activities

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

According to DEA (2017), Guideline on Need and Desirability, Department of Environmental Affairs, to describe the need for a development, it must be determined whether it is the right time for locating the type of land use and/or activity being proposed. To describe the desirability for a development, it must be determined, whether it is the right place for locating the type of land use and/or activity being proposed. Need and desirability can be equated to the concept of wise use of land which can be determined through asking the question: “what is the most sustainable use of land?”

Considering the above, the need and desirability of an application must be addressed separately and in detail answering inter alia the questions as indicated in Table 5.

Table 5: Need and desirability considerations

Securing ecological sustainable development and use of natural resources		
1. 1.1	How will this development (and its separate elements/aspects) impact on the ecological integrity of the area? How were the following ecological integrity considerations taken into account? 1.1.1 Threatened Ecosystems, 1.1.2 Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure, 1.1.3 Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs"), 1.1.4 Conservation targets, 1.1.5 Ecological drivers of the ecosystem, 1.1.6 Environmental Management Framework, 1.1.7 Spatial Development Framework, and 1.1.8 Global and international responsibilities relating to the environment (e.g., RAMSAR sites, Climate Change, etc.).	Protected Areas, NPAES, IBAs and Other The Prospecting Right area falls within a small section of the Magaliesberg Important Birding Area. On the Birdlife South Africa database, it is stated that the IBA was previously known as the Magaliesberg and Witwatersberg IBA as this IBA consists mainly of the Magaliesberg range, which extends in an arc from just north-west of Rustenburg in the west to the N1 in the east near Pretoria. To the south, the Witwatersberg range runs parallel to the Magaliesberg, extending from the town of Magaliesburg in the west to Hartbeespoort Dam in the east. Environmental Impact Assessment All forms of development will have an immediate effect on the natural environment. It is therefore of utmost importance to provide information on the environmental consequences these activities will have and to inform the decision-makers thereof. General impacts Assessed: The site has sections which ranges between transformed, slightly impacted to natural, however, the onset of prospecting activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact vegetation and on the animals that use the area as habitat. If ridges cannot be avoided, impacts will occur and could possibly damage the integrity of the areas by the movement of the machinery and fragmentation caused by large machinery trying to get access to the areas if it is located within the ridge or rocky outcrop areas. The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. Development related activities may lead to the loss of floral species of conservation concern. Ridges and conservation worthy areas should be avoided and includes Class 1 & Class 2 ridges found on the property, rocky outcrops, the

		Bloubank River and various of its tributaries as well as tributaries of the Magalies River. This will limit impacts on the natural biodiversity and prevent disturbance of these unique features present. The SCC Pearsonia bracteata is classified as Near Threatened (NT) in terms of the SANBI Red List and is considered to have a low likelihood of occurrence on the project area. Two (2) species protected in terms of the TNCA were identified to occur on the project area during the site visit, namely Cussonia paniculata (Highveld cabbage tree) and Protea roupelliae (Silver sugar bush). The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas. Impacts on the water resources (and potential wetlands) located within and around the area designated for development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly leak from the vehicles and machines used to conduct the drilling. Continuous rehabilitation and clean-up should take place during the construction and operational phase ensuring the drilled holes have been closed sufficiently and topsoil covered to ensure vegetation growth could recover. However, prospecting is a short-term activity and if done correctly and rehabilitated and filled correctly, impacts will quickly fade. The results may be positive if rehabilitation has been done correctly and the site may be rehabilitated back to a natural landscape. Initial movement around the site to ensure rehabilitation will have similar results as may be expected during the Construction Phase. Incremental losses and fragmentation of habitat are two of the more serious cumulative impacts in terms of fauna and flora. Given the small scale and low intensity of the activities proposed (15 drill holes), the general focus areas and the nature of the proposed development, and the potential for cumulative impacts are expected to be low. It was not realistically possible or very difficult to perform an impact assessment for the cumulative impacts based on the available information. The most important

		aspect related to cumulative impact management for the development, will be to prevent contamination of the surrounding environment and ensure proper rehabilitation of the holes drilled during prospecting. It is the understanding of the specialist that no bulk sampling or trenching will take place and prospecting activities are limited to drilling of Fifteen (15) holes per prospecting right area. Trenching and bulk sampling will have a more pronounced impact on the environment and therefore the ecology.
1.2	How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	Impacts predicted for the development is Medium to Low without mitigation and Low to Very Low with mitigation. This is largely due to the fact that the activity is only diamond core drilling and all sensitive areas as identified by specialist studies will be excluded from the active prospecting area. The wetlands in the prospecting area were identified and these areas was delineated, and buffer zones was recommended around these wetlands where no prospecting activities my take place. No prospecting activities will also take place within 500m of another watercourses (River, stream drainage line) General impacts, such as dust, noise, etc. have been covered within the Environmental management programme Report (EMPr) proposed for the Prospecting activities. Several mitigation and management measures and monitoring features have been included in the EMPr to ensure minimal and managed operation of the footprint area designed for the prospecting area.
1.3	How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	Mitigation and Management measures prescribed will aid to avoid and lower any possible impacts that may result from the prospecting activities. Surface infrastructure for the prospecting project is very limited and temporary. Final rehabilitation of drilled holes will restore Land capability
1.4	What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	General waste, Hazardous waste and litter will be generated during the prospecting operation and these should be kept in designated areas and disposed of to a licensed landfill facility. Other wastes that may cause soil contamination are from the use of vehicles and drilling equipment during the prospecting process, which may lead to hydrocarbon spills. Regulations for soil clean-up and management have been prescribed in the EMPr.

		Portable toilets during prospecting are recommended for the operation and a contractor will be required for the maintenance and service of these systems.
1.5	How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	A specialist heritage study was conducted for the project and these findings have been included in the application. The findings have resulted in all sensitive sites to be delineated and these sites will be excluded from the active prospecting area All other relevant specialist investigations have been incorporated
1.6	How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	It is noted that due to the nature of this project (prospecting for gold and silver), will not significantly deplete any natural resource as the activity is very limited. Through implementing good practice environmental management measures and mitigation measures, it will ensure that both human and environment are not negatively affected by the development.
1.7	How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts? 1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e., de-materialised growth)? (note sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life). 1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e., what are the opportunity costs of using these resources this the proposed development alternative?) 1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?	Renewable natural resources may include the use of water to a limited amount on-site. Temporary Stormwater management infrastructure might be required during prospecting, but this will be determined during phase 1 of prospecting Also refer to the impact assessment and mitigation methods in Section 9 of this report. As the project will make use of existing infrastructure in the prospecting area, no additional / new infrastructure will be required,

1.8	How were a risk-averse and cautious approach applied in terms of ecological impacts? 1.8.1 What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)? 1.8.2 What is the level of risk associated with the limits of current knowledge? 1.8.3 Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	The Environmental risk assessment for all environmental features has been included within Section 9 to Section 10. Ecological (Fauna, Flora and Avifaunal), Wetland and Heritage specialist study (including many other specialist investigations as incorporated within this document) was completed for the project to ensure the impacts of these aspects have been properly assessed and will be catered for within the Environmental Management Programme (EMP). Other specialist investigations were also undertaken, and these are relevant for the specific project and adherence to these management measures will mitigate and manage impacts predicted. The level of risk has been informed by these specialist studies and feedback from the I&APs to date. A section regarding limitations of the studies has been included in the EIA/EMP format and will be available for the competent authorities to consider as well.
1.9	How will the ecological impacts resulting from this development impact on people's environmental right in terms following. 1.9.1 Negative impacts: e.g., access to resources, opportunity costs, loss of amenity (e.g., open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? 1.9.2 Positive impacts: e.g., improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?	Noise, dust and visual pollution can increase if not managed correctly. Possibly water pollution, if impacts are not managed effectively, but with the proper mitigation and good practice environmental management measures, it will result in minimal impacts. These impacts have been assessed and detailed prevention and mitigation measures have been recommended (refer to Table 14 to Table 16)
1.10	Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g., on livelihoods, loss of heritage site, opportunity costs, etc.)?	Ecological aspects and specialist impact assessments have been included in the document and risk assessments utilised to guide the Environmental Management Program.
1.11	Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?	The Environmental risk assessment for all environmental features has been assessed and included in the BAR/EMPr.
1.12	Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?	Ecological, Wetland and, Heritage specialist studies have been undertaken for the project to ensure the impacts of these aspects have been properly assessed and have been catered for within the Environmental Management Programme (EMP). The studies have assisted with the development of a management plan to secure ecological integrity and a healthy biophysical environment.

1.13	Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?	Incremental losses and fragmentation of habitat are two of the more serious cumulative impacts in terms of fauna and flora. Given the small scale and low intensity of the activities proposed (15 drill holes), the general focus areas and the nature of the proposed development, and the potential for cumulative impacts are expected to be low. It was not realistically possible or very difficult to perform an impact assessment for the cumulative impacts based on the available information. The most important aspect related to cumulative impact management for the development, will be to prevent contamination of the surrounding environment and ensure proper rehabilitation of the holes drilled during prospecting. . However, the implementation of the mitigation measures and management measures are applied, cumulative negative impacts as a result of the prospecting will be managed optimally.
"Promoting justifiable economic and social development"		
2.1	What is the socio-economic context of the area, based on, amongst other considerations, the following considerations? 2.1.1 The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area, 2.1.2 Spatial priorities and desired spatial patterns (e.g., need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.), 2.1.3 Spatial characteristics (e.g., existing land uses, planned land uses, cultural landscapes, etc.), and 2.1.4 Municipal Economic Development Strategy ("LED Strategy").	The project is not completely aligned with the objectives of the municipal Spatial Development Framework (SDF) and Integrated Development Plan (IDP); however, it will not compromise the integrity of these respective forward planning documents, due to the relatively short-term period of the prospecting activities. The approval of this prospecting application will not compromise the integrity of the existing environmental management priorities of the area as defined in the Mogale City EMF or Magaliesburg precinct Plan, provided that sensitive areas and vegetation as indicated by the specialists are avoided and the mitigation measures as recommended in this report and in the EMPr (refer to Part B of this report), are implemented.
2.2	Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area? 2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	Also refer to the comments made above. .
2.3	How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	Refer to comments made above. All aspects and comments received from I&APs during the process will be reasonably addressed and incorporated into the final BAR/EMPr submitted to the DMRE. Local economic growth and work opportunities

		will be main benefits from the project if approved and may address some of the physical, psychological, development, cultural and social needs. Main benefits from the prospecting, which may possibly address community needs are mentioned below (also refer next comment) and is in-line with the local municipality and national goals of development and transformation.
2.4	Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?	The main benefits of the proposed prospecting operation are: • Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the continued spending power of employees. • Implementation of the proposed project will result in continued skills development associated with coal mining. • It contributes to the economic welfare of the surrounding community by creating working opportunities. The project is aligned with the objectives of the MPRDA (Act 28 of 2002) • To promote economic growth and mineral development in the Republic • To promote employment and advance the social and economic welfare of all South Africans.
2.5	In terms of location, describe how the placement of the proposed development will. 2.5.1. result in the creation of residential and employment opportunities in close proximity to or integrated with each other, 2.5.2. reduce the need for transport of people and goods, 2.5.3. result in access to public transport or enable non-motorised and pedestrian transport (e.g., will the development result in densification and the achievement of thresholds in terms public transport), 2.5.4. compliment other uses in the area, 2.5.5. be in line with the planning for the area, 2.5.6. for urban related development, make use of underutilised land available with the urban edge, 2.5.7. optimise the use of existing resources and infrastructure, 2.5.8. opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g., not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement), 2.5.9. discourage "urban sprawl" and contribute to compaction/densification,	Alternatives have been assessed during the BAR phase, the findings of the specialist studies, comments from I&APs to date and resources studies have been taking into consideration to determine alternatives for the proposed project. All additional comments from I&APs will be taken into consideration in the final report to be submitted to the competent authority for adjudication.

	2.5.10. contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs, 2.5.11. encourage environmentally sustainable land development practices and processes 2.5.12. take into account special locational factors that might favour the specific location (e.g., the location of a strategic mineral resource, access to the port, access to rail, etc.), 2.5.13. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e., an area with high economic potential), 2.5.14. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and 2.5.15. in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	
2.6	How were a risk-averse and cautious approach applied in terms of socio-economic impacts? 2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)? 2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge? 2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	Gaps and limits in knowledge have been given within the BAR/EMPR document and where appropriate a pre-cautionary approach has been applied. Gaps and limitations have been properly assessed and addressed. The level of risk is low as the project is not expected to have far reaching negative impacts on socio-economic conditions. In fact, the prospecting will have a positive impact in terms of employment for the prospecting period. The gaps in knowledge related to fine tuning of precises prospecting locations but this will be confirmed once the prospecting right is granted.
2.7	How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following: 2.7.1. Negative impacts: e.g., health (e.g., HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? 2.7.2. Positive impacts. What measures were taken to enhance positive impacts?	Refer to all other aspects regarding the Socio-Economic environment, benefits and disadvantages. All of the relevant aspects have also been addressed within the BAR/EMPR and may be viewed within the Impact Assessment, Management and Mitigation tables as contained within this document.
2.8	Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic	The area where the prospecting right is proposed, is currently utilised for a number of uses including tourism, agriculture and grazing. The Land Use and Capability has been described within this document. Refer to the baseline environment section (Section 8).

	impacts will result in ecological impacts (e.g., over utilisation of natural resources, etc.)?	
2.9	What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	Health and Safety considerations have been included in the measures taken to pursue the best practicable environmental options in terms of socio-economic considerations, such as implementation of the mitigation measures such as dust, noise and visual management and mitigation. No other socio-economic considerations are relevant, except for work creation for local communities within the area, but these will be same for any footprint chosen on the farms. The environmental features and impacts, known resource and financial restraints associated with prospecting (specific resource) were the deciding factors concerning the best suited option. Also refer to the impact assessment and mitigation measures in Table 16
2.10	What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	Refer to the impact assessment and mitigation measures in Table 16 of this BAR. The mine will be in line with the regulatory requirements, provide financial provision to ensure that the mitigation measures proposed can be carried out. All alternative scenarios have been discussed in this BAR and EMPR.
2.11	What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	The main benefits of the proposed prospecting operation are: • Direct economic benefits will be derived from wages • Indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees. • Implementation of the proposed project will result in skills development associated with prospecting. • It contributes to the economic welfare of the surrounding community by creating working opportunities. • It contributes to the upliftment of living standards and the health and safety of the local community. • The project will result in the estimation if a reserve. The project is aligned with the objectives of the MPRDA (Act 28 of 2002) • To promote economic growth and mineral development in the Republic; and • To promote employment and advance the social and economic welfare of all South Africans.

		By conducting a Basic Assessment Process, the applicant ensures that equitable access has been considered. Refer to the impact assessment and mitigation measures in Table 16 of this BAR and EMPR.
2.12	What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	Disturbances in terms of Noise, Dust, Waste and Health and Safety have been assessed according to a Risk Matrix and included within this report. Mitigation and Management measures are prescribed for every possible impact which may result from the prospecting right being granted.
2.13	What measures were taken to: 2.13.1. ensure the participation of all interested and affected parties, 2.13.2. provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, 2.13.3. ensure participation by vulnerable and disadvantaged persons, 2.13.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means, 2.13.5. ensure openness and transparency, and access to information in terms of the process, 2.13.6. ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge, and 2.13.7. ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were promoted?	Public Participation will be and has been conducted in accordance with the guidelines and regulations. All comments received during the BAR phase will be included in the Final BAR.
2.14	Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g., a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	Refer to comments made above and Refer to Appendix 6 of this BAR, describing the public participation process that has been implemented for the proposed project.
2.15	What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	The prospecting Right holder will need to draft an Environmental Policy and a Health and Safety Policy, along with Standard Operational Procedures (SOPs) which will regulate activities on the prospecting area. All workers and contractors will need to abide to the policies and framework as specified. It is not anticipated that any new jobs will be created; rather, existing jobs will be maintained for a longer period of time.

2.16	Describe how the development will impact on job creation in terms of, amongst other aspects: 2.16.1. the number of temporary versus permanent jobs that will be created, 2.16.2. whether the labour available in the area will be able to take up the job opportunities (i.e., do the required skills match the skills available in the area), 2.16.3. the distance from where labourers will have to travel, 2.16.4. the location of jobs opportunities versus the location of impacts (i.e., equitable distribution of costs and benefits), and 2.16.5. the opportunity costs in terms of job creation (e.g., a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.).	Refer to comments made above. As the application is for a prospecting Right, it is a long-term project, and the appropriate areas will be rehabilitated afterwards to match the pre-prospecting land use (or alternatively the approved land use).
2.17	What measures were taken to ensure: 2.17.1. that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and 2.17.2. that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?	The applicant is in the process of applying for the following aspects across different legislation requirements: • Prospecting right (this application – Environmental Authorisation). • All legislation which has been incorporated within these processed were discussed within Section regarding Policy and Legislative Content above.
2.18	What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	Refer to comment above as these aspects have already been addressed within previous discussions.
2.19	Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	Yes, for a sensitive environment (which is almost always associated with prospecting) all impacts have been addressed optimally as best possible.
2.20	What measures were taken to ensure that he costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	Mitigation and management measures have been described for all environmental aspects identified and is incorporated into the EMPr.
2.21	Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	Alternatives and analysis have already been addressed above, refer to comments made.
2.22	Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	Refer to comments made above regarding positive and negative socio-economic impacts. Cumulative impacts have been discussed where relevant and are not easily accurately quantifiable.

7. Details of the development footprint alternatives considered

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- the property on which or location where it is proposed to undertake the activity.
- the type of activity to be undertaken.
- the design or layout of the activity.
- the technology to be used in the activity.
- the operational aspects of the activity; and
- the option of not implementing the activity.

According to DEA (2017), Guideline on Need and Desirability and Guidelines on Assessment of Alternatives and Impacts, Department of Environmental Affairs, feasible and reasonable alternatives must be identified for a development as required by the NEMA EIA Regulations and applicable to EIA. Each alternative is to be accompanied by a description and comparative assessment of the advantages and disadvantages that such development and activities will pose on the environment and socio-economy. Alternatives form a vital part of the initial assessment process through the consideration of modifications to prevent and/or mitigate environmental impacts associated with a particular development. Alternatives are to be amended when the development's scope of work is amended. It is vital that original as well as amended alternative identification, investigation and assessment together with the generation and consideration of modifications and changes to the development and activities are documented.

Although an array of alternatives could be investigated for each project, such alternatives will not necessarily be applicable to each project and/or project phase. However, there must always be strived to seek alternatives that maximises efficient and sustainable resource utilisation and minimise any negative impacts on the bio-physical and socio-economic environments.

Feasible alternatives

Details of the development footprint alternatives considered.

Until such time that the non-invasive activities have been completed the exact location of the drill sites cannot be confirmed. However, the following will be applied to the final site selection.

- No drill site will be positioned within any sensitive site as delineated by the specialist studies included in this report.
- No drill site will be positioned within 500m of a water course

- Where possible existing access roads will be utilised to access the drill sites

The property on which or location where it is proposed to undertake the activity.

No location alternative has been considered. Based on the geological setting of the area, the site has a higher potential for ore reserves which has not been explored.

The type of activity to be undertaken.

It is mandatory that prior to mining activities can be undertaken, a prospecting be conducted so that investments can be made on a proven reserve. The prospecting activity provides the economic value of the ore bodies reserves in the underground and also provides the information on the required earth work for stripping the surface for exposure of the ore bodies. From prospecting activities estimation can be made of the ore tonnages, ore grade, and feasibility of the reserve.

The design or layout of the activity.

Each drill site will require an area of approximately 20 x 20m for the duration of the drilling activities. All of the drilling activities will be contained within the 20 x 20m demarcated area. There are no alternative design or layout options for the implementation of a drilling programme. The vegetation clearing will be an area of 3m x5m within the demarcated area.

The technology to be used in the activity.

No alternative technology has been considered for the prospecting activities.

The operational aspects of the activity

The alternative operational aspects include.

- The timing of implementing drilling programme is not set. If necessary certain drill sites can be timed to occur during school terms
- The time of implementing drilling activities during the course of the day. Ideally, drill activities will occur continuously until such time the hole is completed. If necessary, certain holes can be drilled for a 12-hour day and no drilling occurring during the night.

The option of not implementing the activity

Drilling is required in order to generate a SAMREC compliance mineral resource. There is no potential for any future investment in a mine without the confirmation of the mineral resources which can only be obtained from drilling activities.

i) Details of the Public Participation Process Followed

(Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land)

A joint Public Participation Process will be undertaken for the proposed prospecting. The process is undertaken to ensure compliance with regard to the requirements in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) [as amended] (MPRDA), the National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended] (NEMA).

Tasks undertaken for the Public Participation Process (PPP)

This section of the report provides an overview of the tasks undertaken for the PPP to date. All PPP undertaken is in accordance with the requirements of the NEMA requirements and EIA Regulations (2014) [as amended]. It further provides an outline of the next steps in the PPP and makes recommendations for tasks to be undertaken during the environmental assessment phase of the environmental authorisation process.

The PPP tasks conducted for the proposed new plant development project to date includes:

IDENTIFICATION OF KEY INTERESTED AND AFFECTED PARTIES (AFFECTED AND ADJACENT LANDOWNERS) AND OTHER STAKEHOLDERS (ORGANS OF STATE AND OTHER PARTIES)

Public Participation is the involvement of all parties who are either potentially interested and / or affected by the proposed development. The principal objective of public participation is to inform and enrich decision-making. This is also its key role in this BA process.

Interested and Affected parties (I&APs) representing the following sectors of society has been identified:

- National, provincial and local government.
- Agriculture, including local landowners (affected and adjacent).
- Community Based Organisations.
- Non-Governmental Organisations.
- Water bodies.
- Tourism.

- Industry and mining.
- Commerce; and
- Other stakeholders.

FORMAL NOTIFICATION OF THE APPLICATION TO INTERESTED AND AFFECTED PARTIES (INCLUDING ALL AFFECTED AND ADJACENT LANDOWNERS) AND OTHER STAKEHOLDERS

The project was announced as follows:

- Newspaper advertisement

Publication of media advertisement (English) in the Krugersdorp News on **13 May 2021**. *Refer to Appendix 6.1 for proof of newspaper notice placement.*

- Site notice placement

In order to inform surrounding communities, affected and adjacent landowners of the proposed development, site notices will be erected on site and at visible locations close to the site on between 10 to 13 May 2021. *Refer to Appendix 6.2 for proof of site notice placement.*

- Written notification

A Background Information Document (BID) will be disturbed to landowners and other stakeholders by one of the delivery methods as described in section 47D of NEMA. This will be done between 12 to 14 May. Stakeholders will be provided the opportunity to register as an I&AP on the project. *Refer to Appendix 6.4 for proof of the BID*

I&AP's and other key stakeholders, who included the above-mentioned sectors, will be directly informed of the proposed development by e-mail on **14 May 2021**. I&APs will be given 30 days to comment and / or raise issues of concern regarding the proposed development. The commenting period will expire on the **14th of June 2021**. *Refer to Appendix 6.3 for proof of email notification.*

- Notification of public meeting / consultation with landowners. Meetings on electronic platforms can be arrange should any I&AP request it.

CONSULTATION AND CORRESPONDENCE WITH I&AP'S AND STAKEHOLDERS

All I&AP registrations and comments that are received from stakeholders will be formally recorded in the Comments and Responses Report. *Refer to Appendix 6.5 for comments and responses.* The list of registered I&AP will be included in *Appendix 6.6.*

Draft Basic Assessment Report (BAR) and Environmental Management Programme (EMPr)

The Draft BAR and EMPr are herewith released for a period of 30 days from 14 May 2021 to 14 June 2021.

Hardcopies of the Draft BAR and EMPR are herewith submitted to all organs of state and relevant authorities. In addition, copies are placed at Magaliesburg Library. *Refer to Appendix 6.3* for proof of notification of the basic assessment report review period and submission to relevant parties.

NEXT PHASES OF THE PUBLIC PARTICIPATION PROCESS

All comments received from I&APs and organs of state and responses sent will be included in the final BAR and EMPR to be submitted to the Competent Authority (CA).

Once the BAR and EMPr are submitted, the CA will have 107 days to reach a decision on the application. Thereafter the registered I&APs will be notified of the CA's decision.

- **Summary of issues raised by I&Aps**

Table will be completed after the Public Participation Process is completed.

Table 6: Summary of issues raised

Interested and Affected Parties **List the names of persons consulted in this column and mark with an X where those who must be consulted were in fact consulted.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Consultation Status (consensus dispute, not finalised, etc)**
AFFECTED PARTIES					
Landowner/s					
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties					
Municipal councillor					
Local Municipality – Mogale Local Metropolitan Municipality					
District Municipality – N/A					
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWS etc.					
Communities					
Dept. Land Affairs					
.					

Interested and Affected Parties **List the names of persons consulted in this column and mark with an X where those who must be consulted were in fact consulted.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Consultation Status (consensus dispute, not finalised, etc)**
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					
<u>OTHER AFFECTED PARTIES</u>					

8. The Environmental attributes associated with the alternatives

(The environmental attributes described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

Baseline Environment

Information in this section was obtained from the Magaliesburg Precent Plan (2011), Draft Magaliesburg Precent Plan (2020) and the Mogale City Spatial Development Framework (2014)

(1) Baseline Environment

Mogale City, located in the western extent of Gauteng Province, also borders onto the North West Province in the west. The municipal area is home to a number of rural towns and service centres. It functions as a zone of transition between the strong urban core of Gauteng and an extended rural area to the west. The area is also traversed by main roads that serve as freight transport routes between the urban and industrial areas of Gauteng and mining areas in North West province.

In a regional context, the major service and economic centre in the immediate vicinity of the study area is Krugersdorp / Muldersdrift located on the south eastern side. The other major centre of economic activity is Rustenburg to the north west.

The largest part of Mogale City is rural in nature, with a specific urban concentration in the south-eastern part of the municipality where it interfaces with the Gauteng urban complex. The municipality also comprises the urban-rural transition zones typical of large urban areas. The spatial structure of Mogale City is made up of four major development/use zones, namely:

- An extensive rural environment, to the north and west.
- Rural service centres such as Magaliesburg, Tarlton and Hekpoort.
- The urban area that forms a functional part of the Gauteng urban region
- The Muldersdrift rural/urban transition zone; and
- The Cradle of Humankind World Heritage Site and related buffer zone.

The Magaliesburg area is considered to be a tourist attraction with its many landmarks and places of interests in and around the town, such as the Cradle of Humankind, the scenic mountains and accommodation facilities they host, the steam train that arrives every week from Joburg central's Park Station and many more. The town of Magaliesburg and surrounding attractions are being marketed as part of the Magalies Meander initiative.

Due to urban blight and external factors such as being a major freight through-route, the town and surrounding area is however starting to lose its appeal as a regional attraction, as is evident from some of the outlets catering for tourists in and around town closing down in recent years.

In spite of the above, there is a strong and growing presence of conference and spa facilities in the greater area surrounding Magaliesburg. These facilities are not functionally integrated with the town but do enhance the profile of the larger area as a destination point.

The town also plays a role as a service centre for surrounding agricultural and rural residential areas. The larger area surrounding Magaliesburg is an established agricultural area including prominent vegetable farming and horticulture ventures.

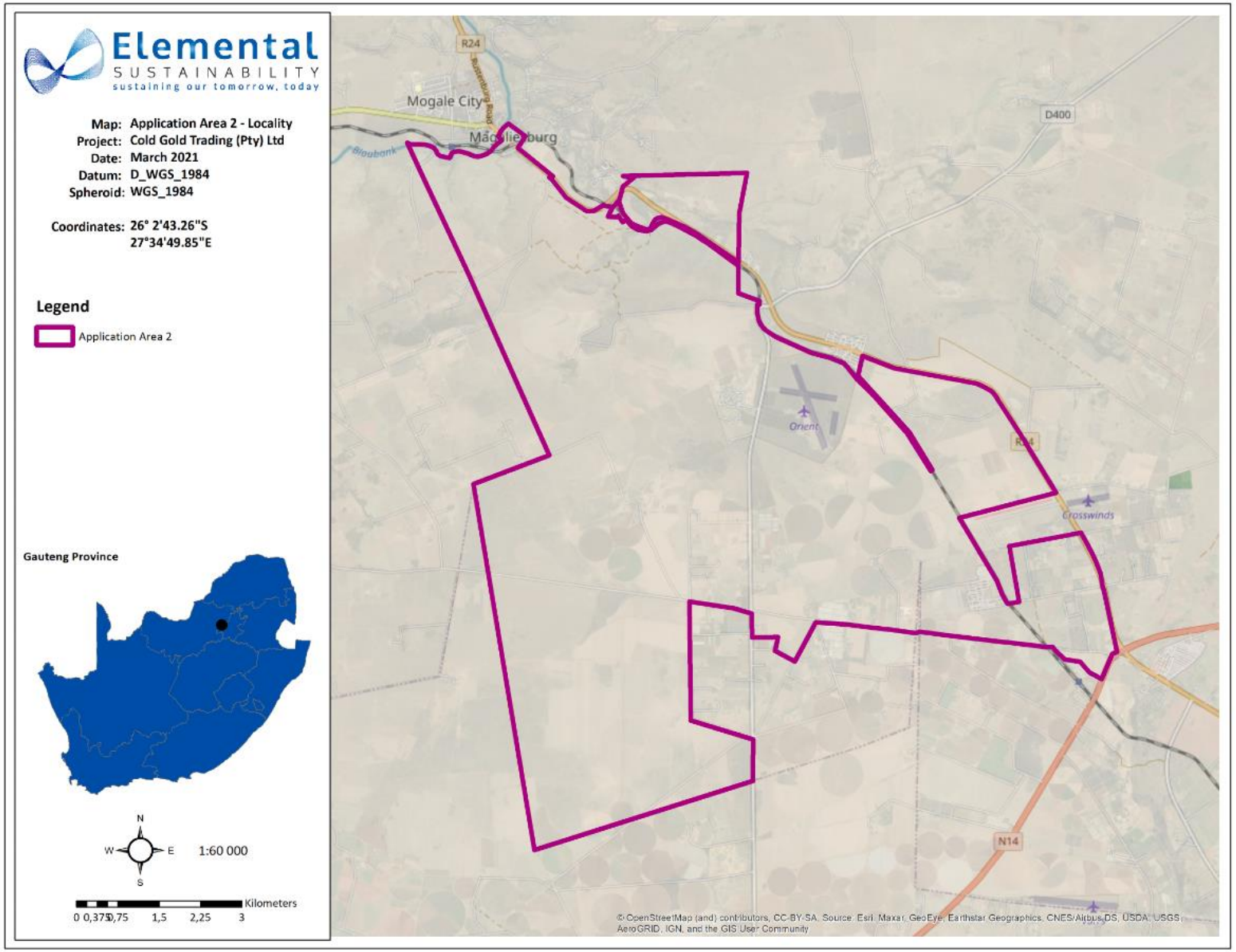

Figure 2: Regional Locality Map of the Study Area

(a) Type of environment affected by the proposed activity.

Information in this section was obtained from the Magaliesburg Precent Plan (2011), Draft Magaliesburg Precent Plan (2020) and the Mogale City Spatial Development Framework (2014)

(Its current geographical, physical, biological, socio- economic, and cultural character)

Gradient and landscape context

Topography and drainage are one of the very basic elements that determine the ability to develop specific areas for specific purposes. Municipal services such as sanitation and stormwater are directly link to the drainage patterns while the slope of the area determines where what can be developed. There are limits to the slope on which urban development can take place while very severe slopes might restrict crop farming or prescribe mining techniques.

The slope and drainage patterns describe the physical appearance of the municipal area. As indicated on the map, the Mogale City area has strong topographical features. The ridges in the western sector of the municipality are strongly articulated and have an impact on development and activities. It defines clear drainage basis surrounded by steep slopes.

Linkages and movement through these mountain ranges constrain the flow of goods and services. However, the topographical features of the western sector create a niche environment for agricultural, recreational and conservation activities.

The relative mountainous areas of the east and west are separated by the band of relative flat land bisecting the municipal area. This area is underlain with dolomites (see geology below) and also represents some the best agricultural potential in the municipal area.

The ridges of the Witwatersberg immediately to the north of the Krugersdorp core had and still have a very direct impact on development. It restricts linkages between the developed south and the developing area to the north. The watershed that exists has ramifications for providing bulk services in the area.

Slope is derived from the general topography of the municipal area. As will be confirmed in the rest of the analysis, topography plays a very important role in defining the development footprint. Slope is an important factor in the development of all functional areas except maybe grazing and conservation activities. Slope is an important factor but very localised at a municipal-wide scale. Each type of development responds differently to slope. In the case of urban development, too steep slopes not only exclude urban development but also serve as access barriers and in this sense might isolate

specific areas of the municipality. However, it is clear that the existing development patterns have already discounted slope and drainage constraints in the development of the municipal area.

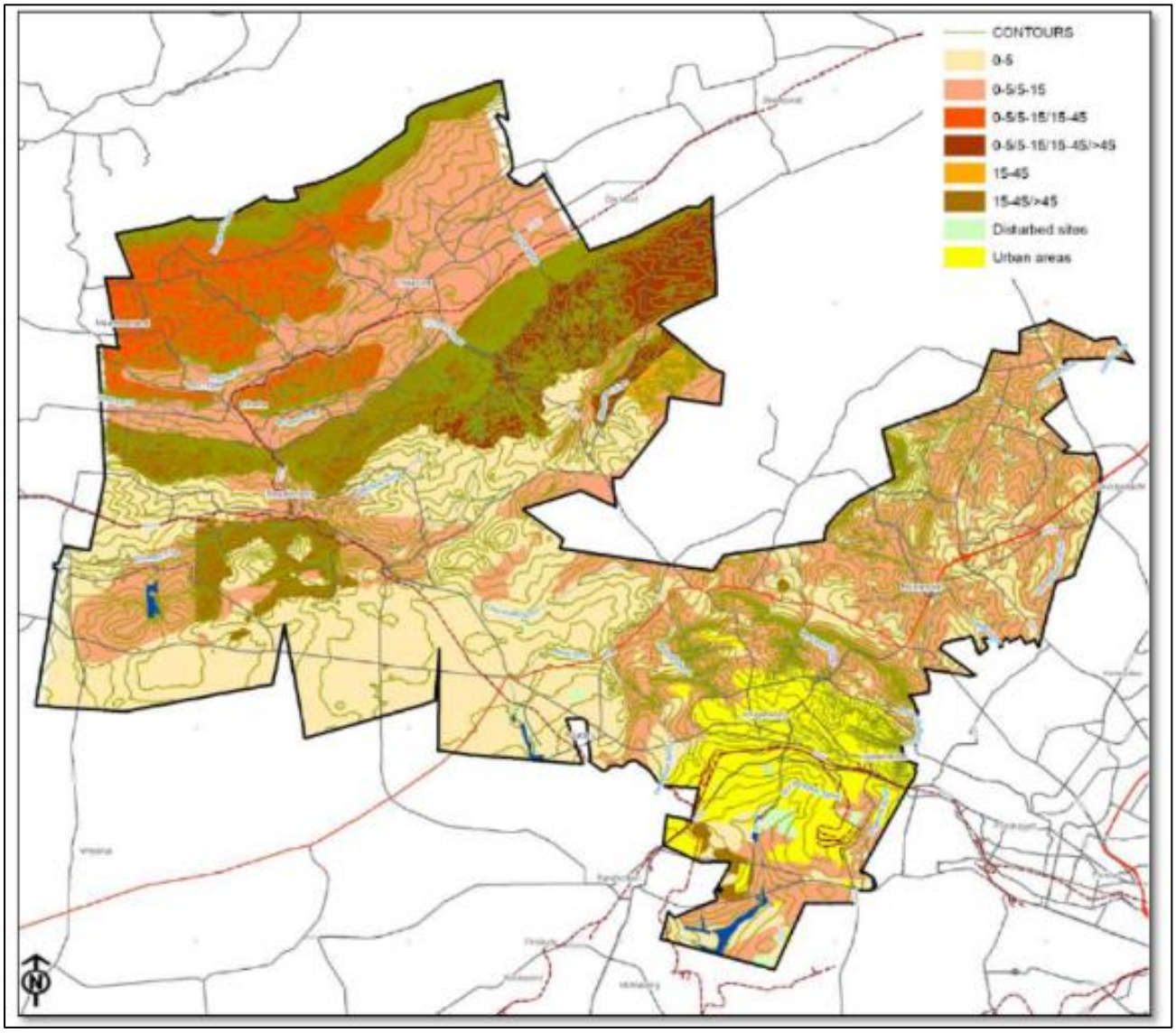

Figure 3: Gradient Map Mogale City Area (Mogale City Local Municipality, SDF, 2011)

Geology and Soils

The areas consist out of the Witwatersrand Basin. The Witwatersrand Basin is a largely underground geological formation which surfaces in the Witwatersrand. It holds the world's largest known gold reserves and has produced over 1.5 billion ounces (over 40,000 metric tons), which represents about 22% of all the gold accounted for above the surface.

The geology of the area is fundamental in sustaining development over the long term. Geology determines not only soil conditions but have an impact on development cost and safety in an urban development context. It also directly determines agricultural potential in terms of soil potential and vegetation types.

The geology has an important impact on the built environment. The negative impact on urban development is a result of the consequences of the weathering of geological formations for the developing of buildings and top structures on land. These negative conditions can usually be mitigated at a cost. In this sense it might impact on decisions about location for the provision of services and infrastructure to poorer households in the area.

The key geological feature is the band of dolomite running through the area. It is however a low priority area for urban development and will not impact on development in general. The existing urban areas are on quartzite that is generally suitable for urban development. The granite in the Muldersdrift area is significant since it might be prone to collapsible soils which might add to the cost of building activities. It should, however, not be a major consideration in making proposals for future development.

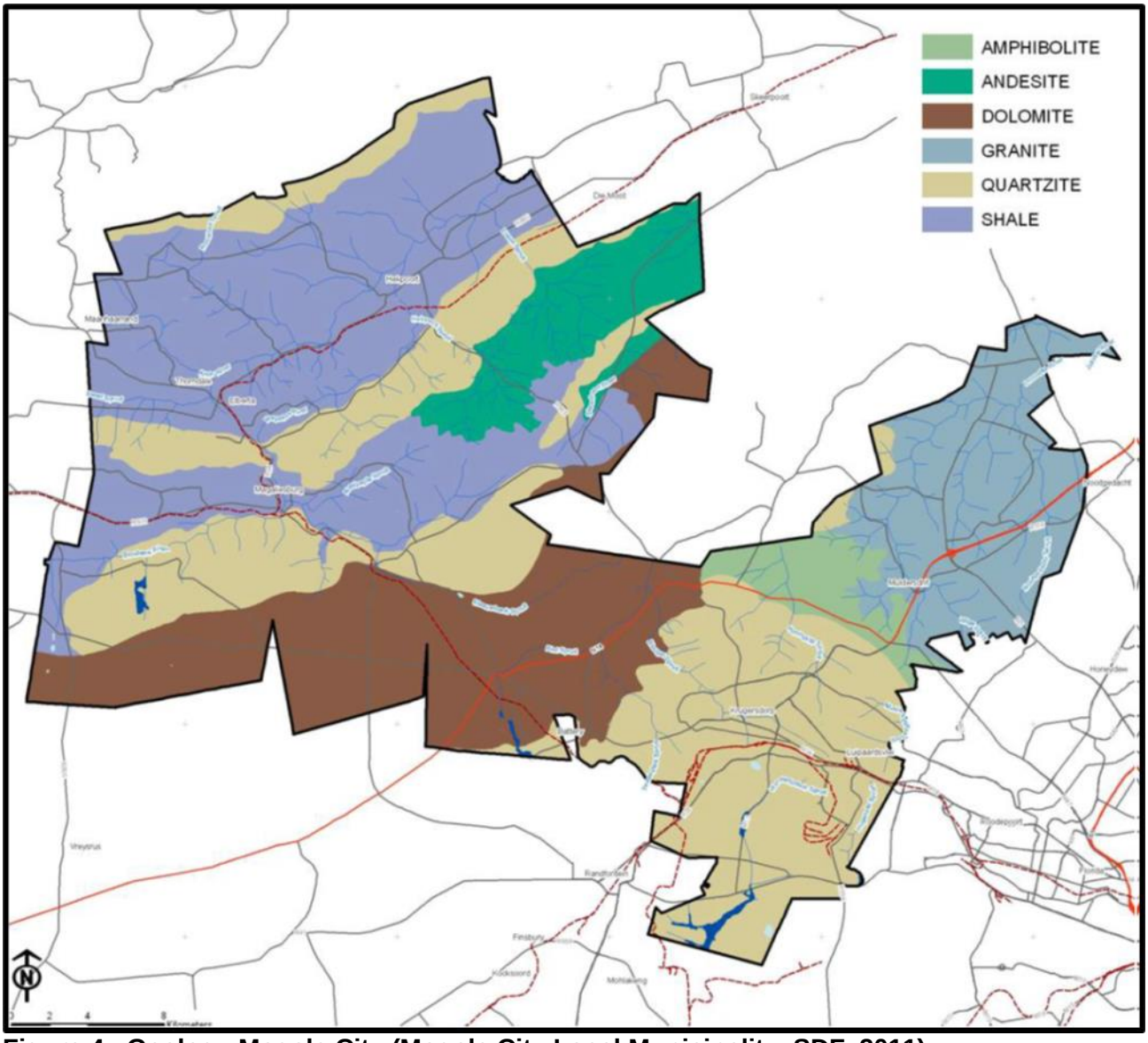

Figure 4 : Geology Mogale City (Mogale City Local Municipality, SDF, 2011)

Soil potential is important for cultivating land. The map below shows a general pattern of low potential on top of the ridges with increased potential in the lower lying areas. The highest potential is shown in the vicinity of Tarlton. Although Mogale city is designated in the Gauteng as an agricultural hub, the general potential for agricultural development remains low.

Taking soil potential one step further allows one to derive at land capability. The Agricultural Research Council land capability is expressed in terms of eight classes. Class I shows the highest potential. Potential decreases down to Class VIII which indicates only suitability for game farming. The first three classes denote a potential for land cultivation while Classes IV to VII reflects land suitable for grazing and Class VIII is only suitable for wildlife farming.

The best land (Class II) runs in band along the southern slopes of the Schurweberg - Krokodilberg range (the southernmost ridges in the northern part of the municipal area passing through the Hartebeeshoek region). However, Class III land in the south east is mostly compromised by existing urban development and it is only in the valley south of the

Magaliesberg where there are any significant areas that can be used for agricultural purposes. The Tarlton area has a Class III land capability. The Muldersdrift area has a Class IV capability which makes it generally unsuitable for land cultivation. The rest of the area is of a very low potential, only suitable for light grazing and wildlife. Table 7 shows the distribution of the land capability classes in the municipal area.

Table 7: Land Capability Groups

Land capability class	Land use options								Land capability groups
	Wildlife	Forestry	Light Grazing	Moderate grazing	Intensive grazing	Poorly adapted cultivation	Moderate well adapted cultivation	Intensive, well adapted cultivation	
I									Arable land
II									
III									
IV									Grazing
V									
VI									
VII									
VIII									Wildlife

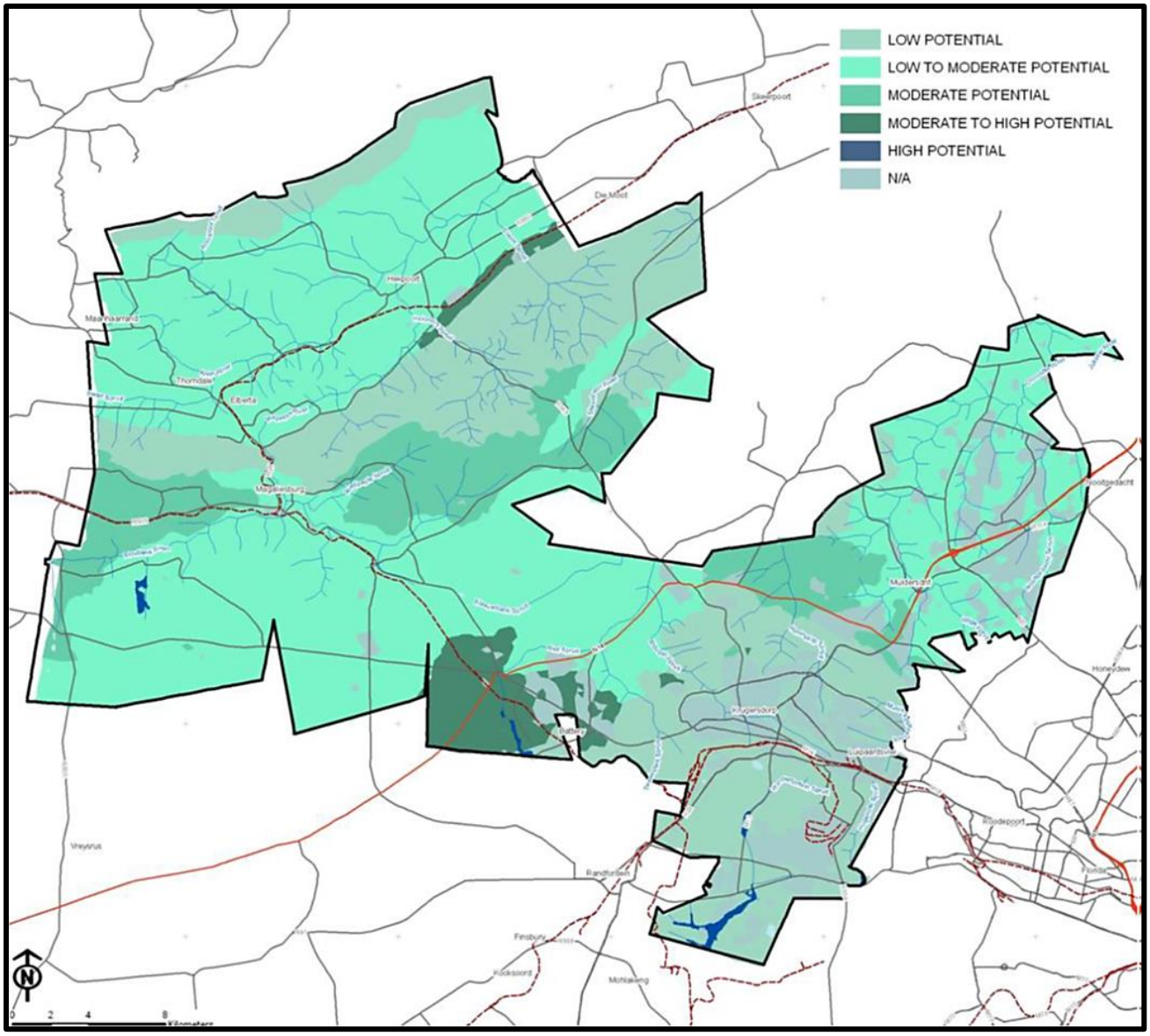

Figure 5: General Soil Potential (SDF, Mogale City Local Municipality, 2011)

Climate

Mogale City is 1450m above sea level. The climate in Mogale City is warm and temperate. The summers here have a good deal of rainfall, while the winters have very little. This location is classified as Cwb by Köppen and Geiger. The average annual temperature is 16.9 °C | 62.4 °F in Mogale City. About 751 mm of precipitation falls annually.

Surface Water

Information in this section was obtained from the Desktop Wetland Verification and Delineation for the Application of a Prospecting Right on several Portions of the Farms Golden Valley 621 IQ, Kaalfontein 44 IQ, Koestersfontein 45 IQ, Migalsoord 152 IQ, Rietpoort 395 JQ, Sluis 46 IQ, Vaalbank 512 JQ and Zuikerboschfontein 151 IQ. Elemental Sustainability, 2021 – Refer to Appendix 8 for detailed report.

Thirty-seven (37) wetland areas were recorded and classed by the National Wetland Map Version 5 (2018) (Figure 7). A summary of the classified wetlands and the number of each are presented in Table 8 below. The landform setting of a wetland plays an important role in determining key components of the water balance and the related geomorphological processes maintaining the wetland functions (Ellery et al. 2009).

These wetlands were delineated, and a 500 m buffer of exclusion was calculated for each (Figure 7). According to the Department of Water Affairs and Forestry Regulation GN1199 all wetlands occurring within 500 m of a development/activities should be considered as sensitive features. Development within 500 m of wetlands trigger the Water Use Licence application process. All proposed prospecting activities should take place outside of the 500 m exclusion buffer zone.

Additional measures include:

- Erosion management and sediment controls should be implemented. This can be obtained by proper catchment land use, including stormwater management measures and sediment input controls.
- It is critical that an alien vegetation control programme is implemented, as encroachment of alien vegetation is already apparent in the study area and is expected to increase as a result of the disturbances.
- No further encroachment by surrounding residential and commercial developments should take place within 500 m of the wetlands.
- Disturbance to any wetland crossings must be minimised and suitably rehabilitated. The design of bridges and pathways should allow for wetland soil conditions to be maintained both upstream and downstream of the crossing to such a degree that wetland vegetation community structures upstream and downstream of the crossing are maintained.
- It must be ensured that flow connectivity along the wetland features is maintained.
- Regular maintenance of all bridges and pathways must take place in order to minimise the risk of further degradation to wetland habitat.

Table 8: Characterisation of the wetland features of the study area (Ollis, 2013)

Feature	Level 4: Hydrogeomorphic (HGM) Unit	Number of Wetlands Present
Seep	**Seep:** a wetland area located on (gently to steeply) sloping land, which is dominated by the colluvial (i.e. gravity driven), unidirectional movement of material down-slope. Seeps are often located on the side-slopes of a valley, but they do not, typically, extend into a valley floor.	**10**
Depression	**Depression:** Landform with closed elevation contours that increases in depth from the perimeter to a central area of greatest depth, and within which water typically accumulates.	**4**
Channelled Valley-Bottom	**Channelled Valley-Bottom Wetland:** A valley-bottom wetland with a river channel running through it.	**11**
Unchannelled Valley-Bottom	**Unchannelled Valley-Bottom Wetland:** A valley-bottom wetland without a river channel running through it.	**12**

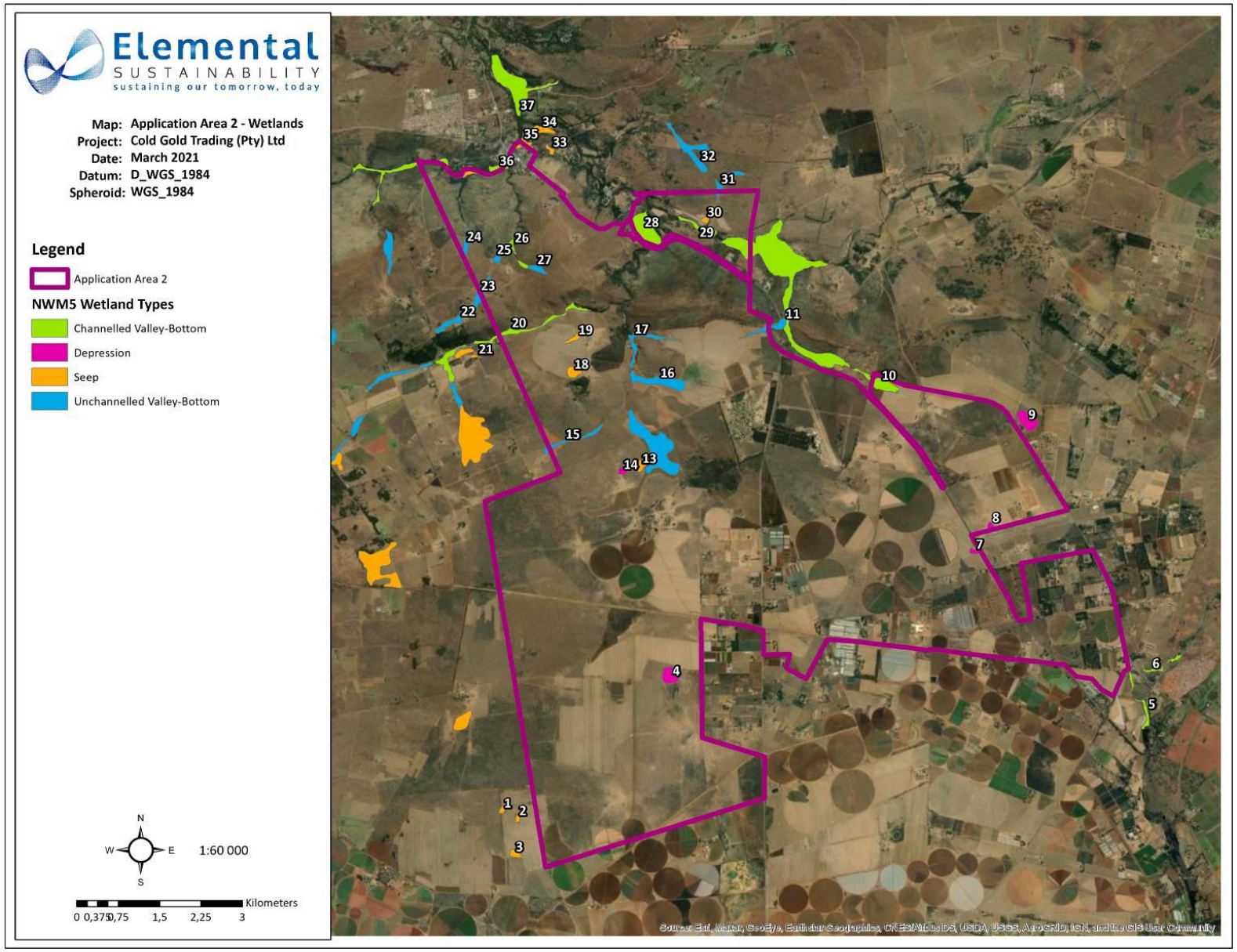

Figure 6: Drainage basins from hydrologic modelling

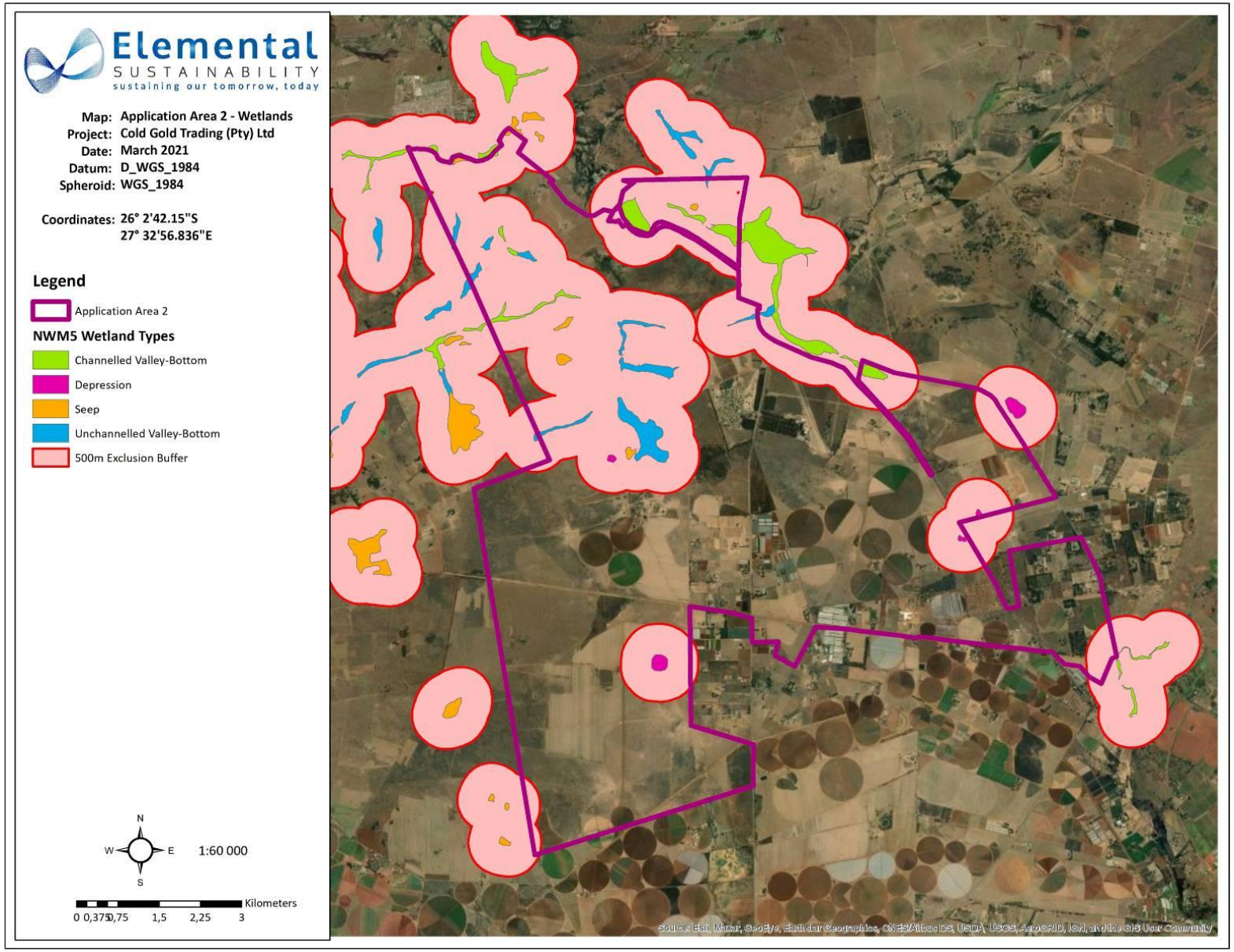

Figure 7: Hydrologic modelling - Buffer zones

The wetland verification and delineation were conducted on a desktop basis. The NWM5 (2018) describes thirty-seven (37) wetlands on site or within 500 m thereof. Four Depressions, 10 Seeps, 11 Channelled Valley-Bottom and 12 Unchannelled Valley-Bottom wetlands were identified. A 500 m exclusion zone was calculated for each wetland identified in order to avoid applying for a Water Use Licence (WUL). No prospecting activities are allowed to take place within the exclusion buffer. Please note that this buffer zone does not take into consideration sensitive faunal elements. Possible catchment activities may contribute to indirect flow, erosion and sedimentation impacts due to catchment land cover and surface runoff alterations caused by surrounding proposed prospecting activities.

It is imperative that an effective management plan is implemented to ensure that all mitigation measures discussed in the report are adhered to and no activities take place within the 500 m exclusion zone. The prospecting operations is only supported if all the conditions, mitigation measures and environmental impact regulations are implemented.

Biodiversity

The information in this section has been obtained from the Terrestrial Ecology and Biodiversity Scan by ENVIRIDI Environmental Consultants, 2021- Refer to Appendix 9 for detailed report.

ENVIRIDI Environmental Consultants was appointed by Cold Gold (Pty) Ltd to undertake an ecological assessment for the study area.

The project area is located over two biomes, i.e., Grassland and Savanna. The northern section of the Prospecting Right area is located in the Savanna Biome. The Savanna Biome is the largest biome in South Africa, covering 34.3% of the country (about 435 000 km2). It is a mixture of grasses and trees or shrubs. Savanna stretches from the Kalahari in the north-west across to the lowveld in the north-east and southwards to the lowlands of KwaZulu Natal and the Eastern Cape. It is found from sea level to about 2 000 metres above sea level. More than 5 700 plant species grow in the Savanna Biome. They include various types of grasses (e.g., Rooigras) and trees like the Baobab, Mopane, Camel Thorn and Knob Thorn.

The Southern section of the Prospecting Right area Is located in the Grassland Biome. The Grassland Biome is found chiefly on the high central plateau of South Africa, and the inland areas of KwaZulu-Natal and the Eastern Cape. Grasslands are dominated by a single layer of grasses. The amount of cover depends on rainfall and the degree of grazing. Trees are absent, except in a few localized habitats. Geophytes (bulbs) are often abundant. The Grassland Biome is considered to have an extremely high biodiversity, second only to the Fynbos Biome. Rare plants are often found in the grasslands, especially in the escarpment area. These rare species are often endangered, comprising

mainly endemic geophytes or dicotyledonous herbaceous plants. Very few grasses are rare or endangered.

Three (3) vegetation types, according to Mucina & Rutherford (2006), occur in the project area, namely Gold Reef Mountain Bushveld (SVcb9), Moot Plains Bushveld (SVcb8), Gauteng Shale Mountain Bushveld (SVcb10) and Carletonville Dolomite Grassland (Gh15). Figure 8 below provides overview of the vegetation types.

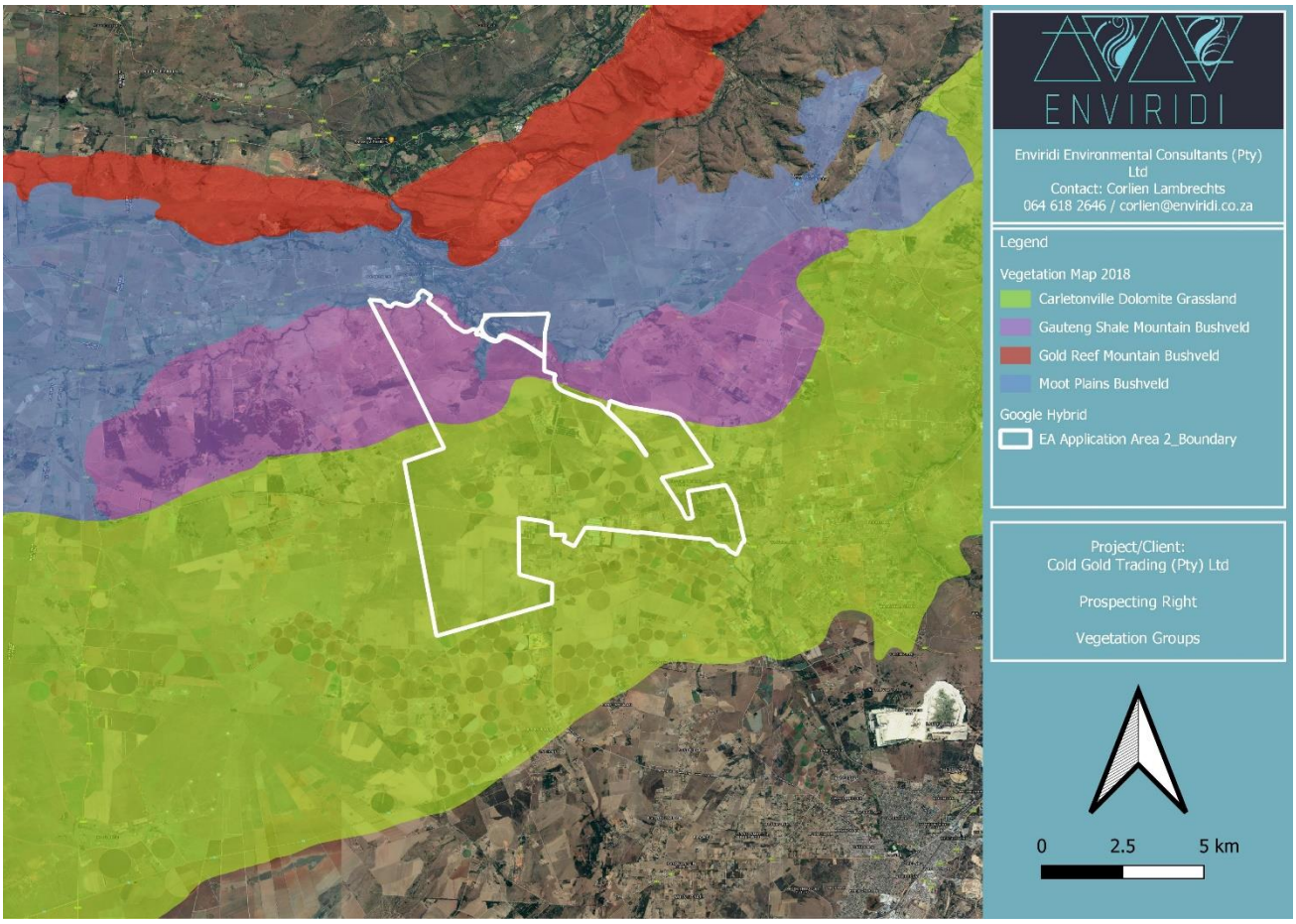

Figure 8: Vegetation Map

The National List of Ecosystems that are Threatened and need of protection (GN1002 of 2011), published under NEMBA (Section 3.1.1), lists national vegetation types that are afforded protection based on rates of transformation. The thresholds for listing in this legislation are higher than in the scientific literature, which means there are fewer ecosystems listed in the National Ecosystem List versus in the scientific literature. The relevant vegetation groups applicable are all listed as Least Concern in the “National List of Ecosystems that are Threatened and need of protection”, which coincides with the threat status provided by the 2018 National Biodiversity Assessment.

Sensitivity will be directly related to specialised niches found within mountainous or rocky terrain. As is visible from the Ridge assessment, the Prospecting Application area have several classified ridge structures on the property, and these should ideally be avoided during prospecting activities.

Within the National Threatened Ecosystems (2011 & 2018), the area generally has a status of Least Concern and is known to be Poorly Protected

Sections of the study area are situated on areas classed as Ecological Support Areas (ESAs) and Critical Biodiversity Areas (CBAs).

The Fossil Hominid Sites of SA Heritage site, which is protected in terms of the NEMPAA, is located approximately 3.5 km to the east of the project area. The northern-most section of the project area is situated in the transition zone of the Magaliesberg Biosphere Reserve.

The area in which the project footprint is situated is classified as Highest Biodiversity Importance and Moderate Biodiversity Importance by the Mining Biodiversity Guidelines.

No NPAES occur within 10 km of site.

Species List

Flora Assessment

The most prominent family is Asteraceae, with thirty-four (34) species, followed by Fabaceae with thirty-one (31) species. Twelve (12) endemic species and thirty-seven (37) exotic species are known to occur within the area queried.

- Of the two hundred and sixty-three (263) species previously recorded for the area, one species is a Species of Conservation Concern (SCC) in terms of its Red List status:
- *Pearsonia bracteata* is classified as Near Threatened (NT) in terms of the SANBI Red List. This species occurs in in Plateau Grassland ecosystems, in the Wolkberg and Pretoria to Klerksdorp area. Plants in Gauteng and North West occur in gently sloping Highveld grassland. Based on available distribution data *Pearsonia bracteata* is considered to have a low likelihood of occurrence on the project area.
- Ten (10) flora species recorded on POSA for the area are listed as protected in the TNCO.
- The POSA records for the area do not contain any species protected in terms of the NFA.
- No species recorded for the area are listed in terms of the ToPS list.
- No species listed in the GDARD, Gauteng Biodiversity Management Red and Orange List species, were recorded as occurring on the project area.

- Of the thirty-seven (37) exotic plant species recorded on POSA for the area queried, fourteen (14) are listed as alien and invasive plant (AIP) species in NEMBA, 2004 (Act 10 of 2004).
- Fifteen (15) species were found to possibly occur on site that have medicinal uses:

Faunal Assessment

- Mammals: 2627BA recorded a total of fifty-five (55) species. A total of seven (7) species has a red listed status and could occur within the larger project area and another species has been added based on its mention in the National Screening Tool Report, which brings the total to nine (9).
- Avifaunal: two hundred and forty (240) species have been recorded for the specific pentads from the data collected within the Southern African Bird Atlas Project 2 (SABAP2). Twelve (12) species of conservation concern could occur. Some of the species listed (SCC) seems to be habitat specialists mostly associated with grassland and water. The water bodies should be avoided, as well as the ridge features, which has natural grassland habitat. Protecting sensitive landscapes automatically protects sensitive biodiversity. Most of these species are associated with water related habitats and therefore these species, although likely only visitors around the specific site, will likely be focussed in the IBA, the Magaliesberg IBA towards the north of the prospecting right extending into the known ridges occurring on the properties (refer to Figure 19).
- Butterflies: A Hundred and four (104) recordings for butterflies within this region, of which only one (1) of the species has a SCC status as per National Red Data List (South Africa Butterfly Conservation Assessment - SABCA 2013 - Appendix C).
- Other Invertebrates: Six (6) Dung beetles, nine (9) Lacewing, fifteen (15) Odonata, two (2) scorpion and three (3) spider species have been recorded within the area, but none of these species is known to have a red listed status. An invertebrate, namely Clonia uvarovi (Uvarov's Clonia) has also been reported within the Screening Tool Report for the specific area and has a redlisted status (Vulnerable).
- Reptiles: A total of thirty-seven (37) species have been historically recorded within the QDS, with only one (1) species is listed as SCC.
- Amphibians: A total of twelve (12) species are shown on ADU, with only one (1) listed as SCC

SITE SURVEY RESULTS

Floral Assessment Results

A site survey was undertaken on the project area on 1 April 2021.The study area is approximately 6 300 ha in extent.

The proposed development footprint is situated on varied topography ranging from undulating plains to ridges. The Bloubank River and various of its tributaries, as well as tributaries of the Magalies River occur on the project site.

Land uses, on and adjacent to the project area, include crop cultivation, livestock grazing, natural vegetation, residences, businesses, and agriculture related infrastructure.

Existing impacts on the vegetation of the study area include roads and tracks, crop cultivation, proliferation of AIP species, livestock grazing, human and traffic movement and infrastructure development.

The majority of the project site can be characterised as Grassland, with rocky outcrops exhibiting vegetation composition associated with montane bushveld. Note that the ridges toward the far north of the project area were not surveyed in detail as these sections were not included in the focus area provided by the applicant.

In natural and undeveloped areas, the grass layer was generally dominant and well developed. Dominant grass species recorded during the site survey included *Aristida bipartita, Aristida congesta, Cynodon dactylon, Digitaria eriantha, Eragrostis lehmanniana, E. plana, E. curvula, E. gummiflua, Hyparrhenia hirta, Hyparrhenia tamba, Loudetia simplex, Monocymbium ceresiiforme, Panicum natalense, Melinis repens, Setaria pumila, Setaria sphacelata,* and *Sporobolus africanus*.

The forb layer comprised typical grassland species that are also representative of the reference vegetation types, such *as Barleria macrostegia, Cephalaria zeyheriana, Cleome maculata, Commelina africana, Convolvulus sagittatus, Cucumis zeyheri, Dicoma anomala, Euryops laxus, Geigeria ornativa, Helichrysum harveyanum, Hypoestes triflora, Nidorella hottentotica, Ornithogalum juncifolium, Plantago lanceolata, Senecio erubescens, Sida dregei, Sonchus dregeanus*, and *Trachyandra asperata.*

Rocky outcrops surveyed during the site visit were found to be less disturbed and exhibited higher diversity of species.

General findings:

- Two (2) species protected in terms of the TNCA were identified to occur on the project area, namely *Cussonia paniculata* (Highveld cabbage tree) and *Protea roupelliae* (Silver sugar bush).

- *Cussonia paniculata* is endemic to South Africa and is listed as Least Concern on the SANBI Red List. This species was identified on rocky outcrops and is expected to occur on ridge areas as well.
- *Protea roupelliae* is not endemic and is listed as Least Concern on the SANBI Red List. This species was identified in areas considered as primary grassland.
- None of the floral species recorded during the site survey are listed in the ToPS list or the NFA. No National SCC were identified during the site survey.
- Eight (8) exotic species, of which four (4) are categorised as AIP in terms of NEMBA, were identified to occur on the project area. *Acacia decurrens, A. mearnsii, Pinus spp*. and *Eucalyptus* spp. were found to occur across the project site in small and some larger patches. *Cosmos bipinnatus* was found throughout the site often along road verges but in high densities in some sections, specifically the southern sections of the site.
- *Seriphium plumosum* (Bankrupt bush), which can be an encroaching species, was found in higher densities in certain sections of the project area.

Natural and undeveloped grassland, rocky outcrops, watercourse and wetlands on the project footprint are considered to be of high sensitivity. Ridges are also considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.

Faunal Assessment Results

The area (specifically where the footprints are proposed) has been transformed based on agricultural activities ranging between pasture and active crop planting (specifically sunflowers, beans and other). Other areas have been found natural and associated with the ridge and riverine areas, with scattered farming activities and sheep or cattle found grazing in these areas during the field assessment. The area on the known reef area have been found mostly disturbed on the western border and increasing in natural condition and therefore sensitivity towards the eastern side. Old mining footprints have also been found to occur in the known reef area.

The larger focus area towards the south, have been found to be mostly agricultural areas and characterised with sunflower fields and or unused areas filled with Bankrupt Bush (*Seriphium plumosum*).

Species were recorded as sighted, and occurrence verified based on signs and dung. The areas surveyed focussed mainly on the areas where surface impacts would occur and be focussed, which included the area where data for the reef is available as well as the larger focus area.

Large sections of the area under investigation consisted of secondary (impacted) grassland between the agricultural areas as shown above. Although most of these areas have been transformed and

other signs of mismanagement were visible, sensitive zones do occur as with any grassland associated habitat type.

The faunal investigation provides a description of the ecological diversity in terms of species identification as well as the occurrence of threatened/sensitive species that is dependent on available habitat. During the desktop analysis, it was determined that several Red Data species were listed on the South African National Biodiversity database (SANBI) for the QDS that encompass the specific area.

The most important species of concern that will lead the management is determined to be:

- Species with specialised niches (riverine, ridges or wetland areas).
- Species with large range requirements (grazing mammals).
- Species that have limited adaptation capabilities (such as reptile niches).
- Migrating species (importance of the ecological and aquatic corridor); and
- Species that use the different grassland areas as part of their larger range or preferred habitat (predatory species).

Sensitive invertebrate species are expected to be associated with the grassland and rocky areas as these represent specialised niches.

No SCC animals were sighted to occur, but the overall most important feature will be the protection of the ridges and water resources, wetlands and remaining natural grasslands within the area, it will by default protect all other endemic, sensitive, and specialised species found to occur within the area. Mole species (specific species unknown) occurred within the ridge areas surveyed, and these areas should be avoided and delineated as a no-go zone (very high sensitivity) to protect it as important habitat for many sensitive and potentially threatened or listed species.

The development should focus on areas where the environment has been impacted (agriculture or other) and keep clear of riverine and ridge areas, which should be avoided.

Since the development is only that of Fifteen (15) boreholes per prospecting right, no significant impacts are expected on sensitive animals if the holes are rehabilitated properly, and the locations are chosen cognisant of sensitive environmental features.

The faunal investigation provides a description of the ecological diversity in terms of species identification as well as the occurrence of threatened/sensitive species that is dependent on available habitat.

It should be noted that several National Species of Conservation Concern (SCC) are thought to occur in the regional area due to the nature of the vegetation and sensitive landscapes found (ridges and riverine sensitive areas) and associated habitat as shown above although not directly observed during the field assessment.

Sensitivities Identified

The objective of a sensitivity mapping exercise is to determine the location and extent of all sensitive areas that must be protected from transforming land uses. Ideally areas which has already been transformed should be utilised for the location of the Fifteen (15) boreholes per right.

Sections of the study area are situated on areas classed by the GCP as Ecological Support Areas (ESAs) and Critical Biodiversity Areas (CBAs).

The northern-most sections of the project area are situated in the transition zone of the Magaliesberg Biosphere Reserve.

The area in which the project footprint is situated is classified as Highest Biodiversity Importance and Moderate Biodiversity Importance by the Mining Biodiversity Guidelines.

Two (2) species protected in terms of the TNCA were identified to occur on the project area, namely *Cussonia paniculata* (Highveld cabbage tree) and *Protea roupelliae* (Silver sugar bush).

Natural and undeveloped grassland, rocky outcrops, watercourse and wetlands on the project footprint are considered to be of high sensitivity. Ridges are also considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.

Table 9 : *Considerations for Sensitivity Delineation*

Vegetation Characteristics	**Animal & Plant Diversity Sensitivity**	**Adapted based on other Ecological considerations**
Protected Areas and Other Protected zones	All awarded High Sensitivity	High Sensitivity (Red) No prospecting nor mining activities are allowed within Protected Areas
Conservation Plan & Ridges	Moderate Sensitivity - Vegetation being representative of the natural vegetation type and although slightly disturbed the composition of the	Moderate-to-High Sensitivity (Red/Orange) based on natural composition of species still found to occur and includes buffer zones

	vegetation is considered to be in good condition. GDARD Conservation Plan features, Critical Biodiversity Areas (CBAs) all awarded moderate – to high sensitivity	around rivers and the 200 m buffer around the ridges as required by GDARD. Specifically, Class 1 Ridges, but both Class 1 and Class 2 Ridge have been awarded with High sensitivity along with its 200m buffer zone Rivers itself have been awarded with High sensitivity and includes 32 m buffers.
IBAs and ESAs	Important Birding Areas and Ecological Support Areas are designed to protect and buffer habitat for sensitive species that could occur.	Moderate Sensitivity (Yellow), sensitivity increased importance of species that could still be found in these areas and as habitat support
Other areas	No-to-low sensitivity awarded to Agricultural areas	Prospecting rather encouraged in these areas from an ecological perspective when compared to the abovementioned areas. These areas have not been marked with elevated sensitivity and is therefore the proposed focus areas for activity.

Protected Areas, NPAES, IBAs and Other

The Prospecting Right area falls within a small section of the Magaliesberg Important Birding Area (Refer to Figure 9).

On the Bird Life South Africa database, it is stated that the IBA was previously known as the Magaliesberg and Witwatersberg IBA as this IBA consists mainly of the Magaliesberg range, which extends in an arc from just north-west of Rustenburg in the west to the N1 in the east near Pretoria. To the south, the Witwatersberg range runs parallel to the Magaliesberg, extending from the town of Magaliesburg in the west to Hartbeespoort Dam in the east.

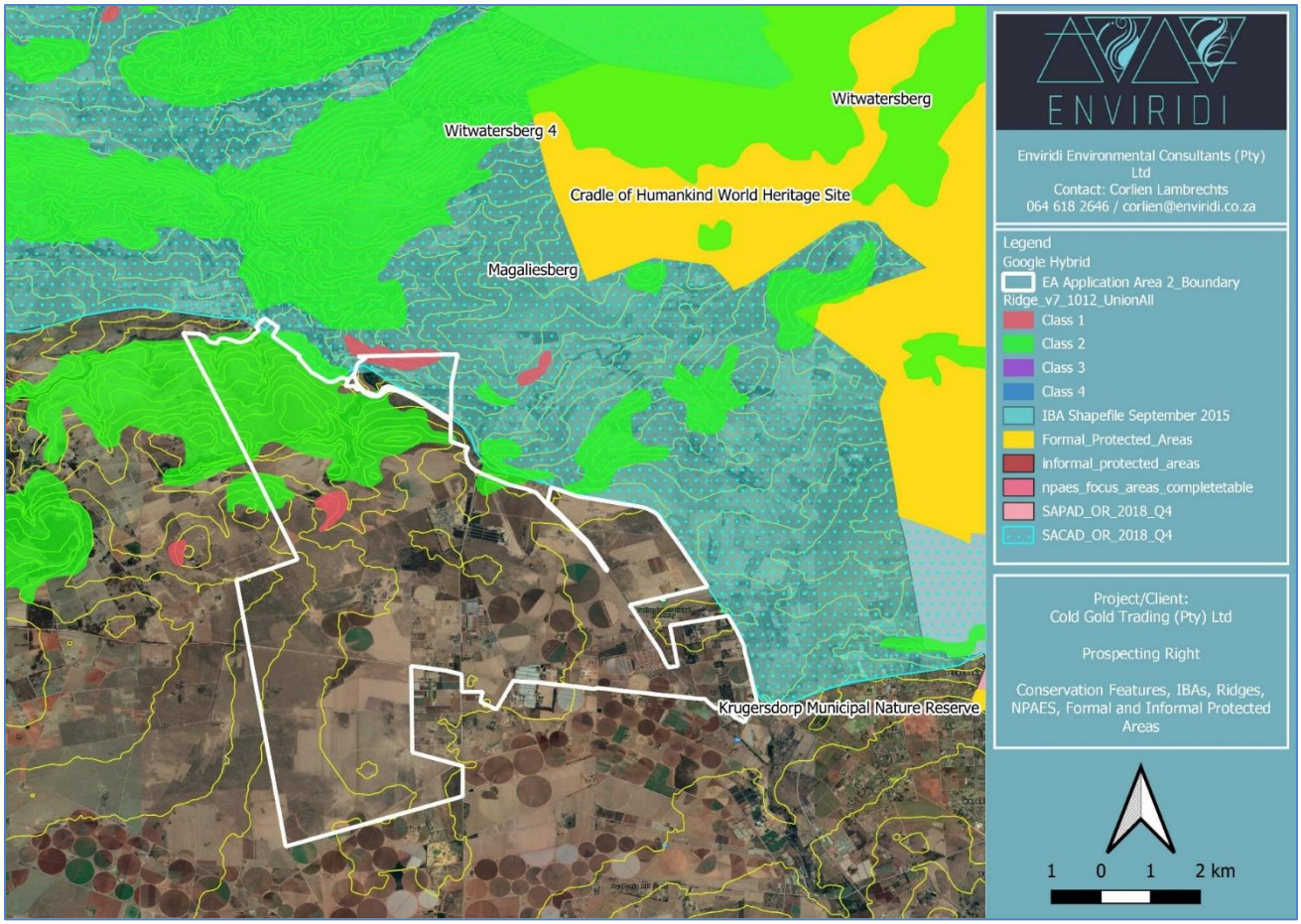

Figure 9: Important Biodiversity and Birding Areas and Protected Areas (NPAES and IBAs)

Ridges

The area was assessed in terms of slope to aid the assessment and classification in terms of Ridge Guidelines. Ridge assessments are prescribed by GDARD (specifically for Gauteng), but serves as a good indicator overall, as ridges and rocky areas are more sensitive and specialised niches in terms of ecological aspects. Figure 10 below provides layout of ridges as identified in the study area

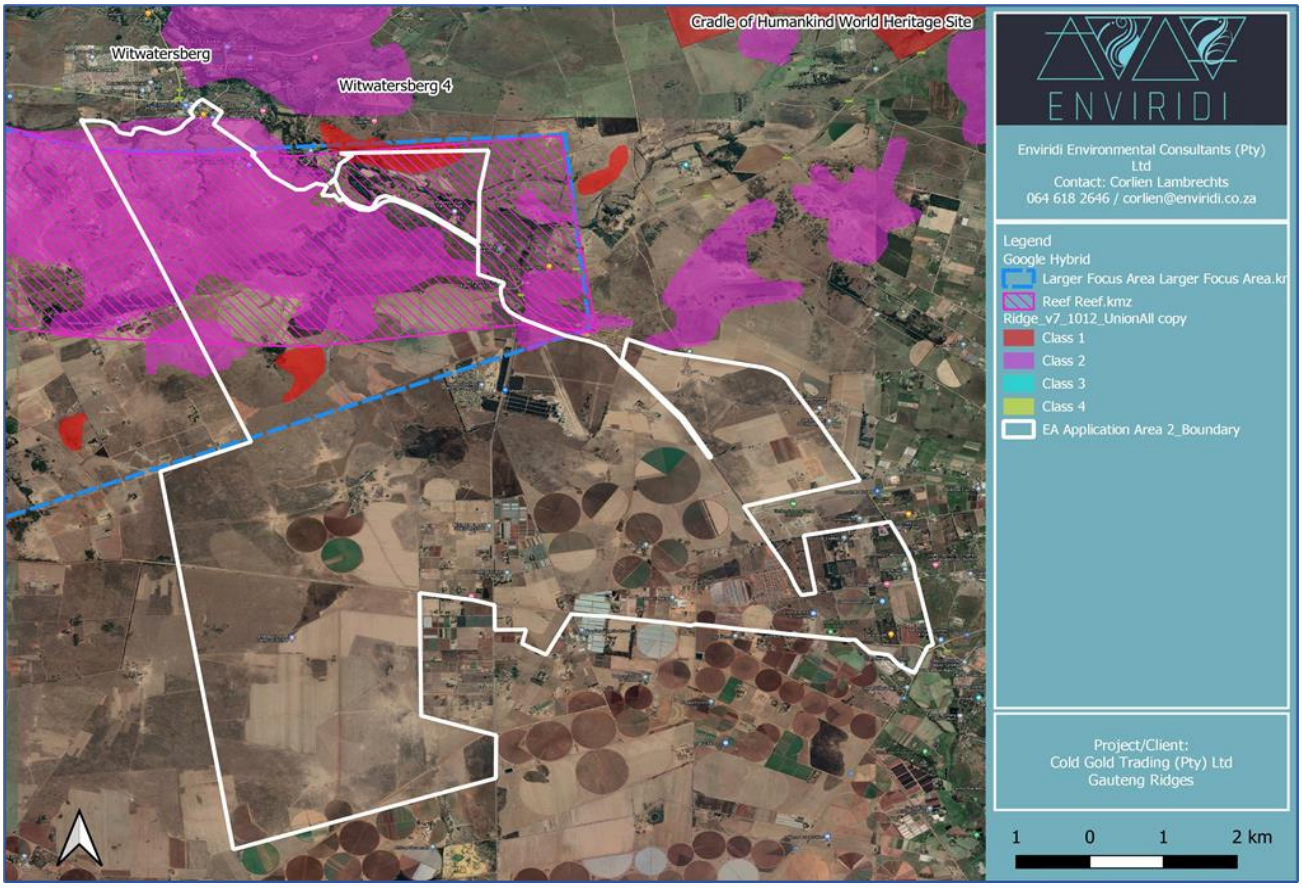

Figure 10: GDARD Ridges and Classes

Sensitivity will be directly related to specialised niches found within mountainous or rocky terrain. As is visible from the images above, the Prospecting Application area have several classified ridge structures, and these should ideally be avoided during prospecting activities.

The guidelines give the following information regarding the slope and delineation of ridges: “In addition, ridges are characterized by slopes of 5° or more (that is equivalent to slopes of > 8.8% or > 1: 11 gradient) when modelled in a Geographic Information System digital elevation model that is based on 20 m contour intervals at a scale of 1:50 000”.

Additionally, these areas have multiple drainage structures currently may need additional licensing in terms of the National Water Act, 1998 (Act No. 36 of 1998) pending the findings of the surface water assessment.

Conclusion of the ecological scan

The location of the biodiversity study of the proposed project as part of the Cold Gold Trading (Pty) Ltd: Prospecting Right application on various portions and sections of the farms Rietpoort 395 JQ, Vaalbank 512 JQ, Koesterfontein 45IQ, Kaalfontein 44 IQ, Sluis 46 IQ, Migalsord 152 IQ,

Suikerboschfontein 151IQ and Golden Valley 621 IQ within the Mogale City Local Municipality (GT481) and the West Rand District Municipality DC48, Gauteng Province.

It has been communicated to the specialist involved in the assessment that a total of fifteen(15) drill holes will be implemented as part of the Prospecting plan and a focus area of the drilling has been provided where the assessment is focussed due to the large footprints of the Prospecting Right Application, it is not feasible surveying thousands of hectares for fifteen(15) drill points especially since the exact coordinates are not yet known. Therefore, the known location of the reef (which is the focus point of the activity) is the focus of this assessment.

The project area is located over two biomes, i.e. Grassland and Savanna. Three (3) vegetation types, according to Mucina & Rutherford (2006), occur in the project area, namely Gold Reef Mountain Bushveld (SVcb9), Moot Plains Bushveld (SVcb8), Gauteng Shale Mountain Bushveld (SVcb10) and Carletonville Dolomite Grassland (Gh15).

The National List of Ecosystems that are Threatened and need of protection (GN1002 of 2011), published under NEMBA lists national vegetation types that are afforded protection based on rates of transformation. The thresholds for listing in this legislation are higher than in the scientific literature, which means there are fewer ecosystems listed in the National Ecosystem List versus in the scientific literature. The relevant vegetation groups applicable are all listed as Least Concern in the “National List of Ecosystems that are Threatened and need of protection”, which coincides with the threat status provided by the 2018 National Biodiversity Assessment.

Sensitivity will be directly related to specialised niches found within mountainous or rocky terrain:

- The Prospecting Application area have several classified ridge structures, and these should ideally be avoided during prospecting activities.
- Sections of the study area are situated on areas classed as Ecological Support Areas (ESAs) and Critical Biodiversity Areas (CBAs).
- The Fossil Hominid Sites of SA Heritage site, which is protected in terms of the NEMPAA, is located approximately 12 km to the east of the project area. The northern-most sections of the project area are situated in the transition zone of the Magaliesberg Biosphere Reserve.
- The area in which the project footprint is situated is classified as Highest Biodiversity Importance and Moderate Biodiversity Importance by the Mining Biodiversity Guidelines.
- No NPAES occur within 10 km of site.

SITE SURVEY RESULTS

A site survey was undertaken on the project area on 1 April 2021.

Floral Assessment Results:

- Two (2) species protected in terms of the TNCA were identified to occur on the project area, namely *Cussonia paniculata* (Highveld cabbage tree) and *Protea roupelliae* (Silver sugar bush).
- *Cussonia paniculata* is endemic to South Africa and is listed as Least Concern on the SANBI Red List. This species was identified on rocky outcrops and is expected to occur on ridge areas as well.
- *Protea roupelliae* is not endemic and is listed as Least Concern on the SANBI Red List. This species was identified in areas considered as primary grassland.
- None of the floral species recorded during the site survey are listed in the ToPS list or the NFA. No National SCC were identified during the site survey.
- Eight (8) exotic species, of which four (4) are categorised as AIP in terms of NEMBA, were identified to occur on the project area. *Acacia decurrens, A. mearnsii, Pinus* spp. and Eucalyptus spp. were found to occur across the project site in small and some larger patches. *Cosmos bipinnatus* was found throughout the site often along road verges but in high densities in some sections, specifically the southern sections of the site.
- *Seriphium plumosum* (Bankrupt bush), which can be an encroaching species, was found in higher densities in certain sections of the project area.
- Natural and undeveloped grassland, rocky outcrops, watercourse and wetlands on the project footprint are considered to be of high sensitivity. Ridges are also considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.

Faunal Assessment Results:

- The area (specifically where the footprints are proposed) has been transformed based on agricultural activities ranging between pasture and active crop planting (specifically sunflowers, beans and other). Other areas have been found natural and associated with the ridge and riverine areas, with scattered farming activities and sheep or cattle found grazing in these areas during the field assessment. The area on the known reef area have been found mostly disturbed on the western border and increasing in natural condition and therefore sensitivity towards the eastern side. Old mining footprints have also been found to occur in the known reef area.

- The larger focus area towards the south, have been found to be mostly agricultural areas and characterised with sunflower fields and or unused areas filled with Bankrupt Bush (*Seriphium plumosum*).
- Large sections of the area under investigation consisted of secondary (impacted) grassland between the agricultural areas as shown above. Although most of these areas have been transformed and other signs of mismanagement were visible, sensitive zones do occur as with any grassland associated habitat type.
- No SCC animals were sighted to occur, but the overall most important feature will be the protection of the ridges and water resources, wetlands and remaining natural grasslands within the area, it will by default protect all other endemic, sensitive, and specialised species found to occur within the area. Mole species (specific species unknown) occurred within the ridge areas surveyed, and these areas should be avoided and delineated as a no-go zone (very high sensitivity) to protect it as important habitat for many sensitive and potentially threatened or listed species.
- It should be noted that several National Species of Conservation Concern (SCC) are thought to occur in the regional area due to the nature of the vegetation and sensitive landscapes found (ridges and riverine sensitive areas) and associated habitat as shown above although not directly observed during the field assessment.
- Since the development is only that of fifteen (15) boreholes, no significant impacts are expected on sensitive animals if the holes are rehabilitated properly, and the locations are chosen cognisant of sensitive environmental features.
- Incremental losses and fragmentation of habitat are two of the more serious cumulative impacts in terms of fauna and flora. Given the small scale and low intensity of the activities proposed (15 drill holes), the general focus areas and the nature of the proposed development, and the potential for cumulative impacts are expected to be low. This should be re-assessed once mining becomes feasible, since mining will have larger and more long-term impacts.
- It was not realistically possible or very difficult to perform an impact assessment for the cumulative impacts based on the available information. The most important aspect related to cumulative impact management for the development, will be to prevent contamination of the surrounding environment and ensure proper rehabilitation of the holes drilled during prospecting.
- It is the understanding of the specialist that no bulk sampling or trenching will take place and prospecting activities are limited to drilling of fifteen (15) holes. Trenching and bulk sampling will have a more pronounced impact on the environment and therefore the ecology.
- A formal terrestrial management plan has also been included within Section 10. General preference in terms of layout will be within those areas delineated as Low sensitivity, which

cannot be the case in this instance. Grassland will always have elevated sensitivity, especially if it is still considered to have a natural composition.

- It is the reasoned opinion of the specialist that the development may continue if all mitigation measures are implemented. Ridges and natural grassland vegetation habitat constitute the most important features which make up the overall PR area. The riverine and wetland buffers as delineated and recommended by the wetland specialist should be avoided and will be sufficient in terms of also protecting ecological integrity for these systems and therefore maintained as guidance for the development.
- Ideally, no prospecting activities should be allowed on the identified and shown ridges, as this will impact on sensitive niches and features as well as impact the provincial conservation targets in terms of ecology.

Cultural and Heritage

The information in this section has been obtained from the Cultural heritage desktop assessment (Coetzee 2021)- Refer to Appendix 10 for detailed report.

The study area: Select portions of the Farms Farms Blaauwbank 505 JQ, Delarey 164 IQ, Delarey 168 IQ, Delarey 171 IQ, Greenway 715 IQ, Malonys Eye 169 IQ, Steenekoppie 153 IQ, Vlakplaats 160 IQ, Wallis Haven 154 IQ, Wolvekrans 156 IQ and Zuikerboschfontein 151 IQ, Magaliesburg, Gauteng

As can be seen from previous research done in the area, the general region is significant from a heritage perspective. Heritage sites are likely to include cemeteries/graves, Stone Age Sites, Iron Age and historical sites. Since gold mining can be dated to at least 1874 on the Farm Blaauwbank that is located directly north of the study area, it can be assumed that similar mining activities took place in the general area during the same time. Remnants of the South African War of 1899 – 1902 are also likely to be encountered within the study area. Since heritage sites, such as burial sites, are not always clearly identifiable due to disturbed/removed surface features, care must be exercised when prospecting.

The figures (as presented in Appendix A of the Heritage Impact Assessment Report) indicate the study area on 1943, 1944, 1957, 1968, 1976, 1985, 2006 and 2010 topographical maps, as well as on 1961 aerial images. Table 9 lists the 192 potential sites and sensitive areas, type of site, location, estimated extent and current status as observed on recent aerial imagery. Figure 11 – 14 indicate the identified potential sites on a 2020 aerial backdrop, while hills and areas surrounding water sources that are often associated with archaeological sites, are indicated on Figure 11 -16 shows the potential sites classified according to sites that appear to be associated with surface remains and those that appear to be demolished. It should also be noted that the ‘mining’ category in Figure 11 - 14consists

of early mines, as well as prospecting pits. The 'building' category includes any building, school, shop etc., while 'structures' refer to any other form of construction such as windmills and kraals. Figure 15 and Figure 11 – 14 show that 112 buildings or clusters of buildings were identified, 56 which appear to have been demolished. Four locations associated with graves or cemeteries were identified. The status of these sites, however, could not be determined as no surface indications are visible one aerial imagery.

Forty-four areas associated with huts were identified, while only 13 areas appear to be associated with surface remains.

In four instances historical topographical maps indicate the presence of ruins. On contemporary aerial imagery, however, surface remains are visible at one of the sites only.

The four instances where structures were identified on historical data sources appear to have been demolished as these areas are associated with cultivated fields or open veldt.

One site is indicated as a 'stone wall' on historical topographical maps. Although the site appears to be demolished, a strong possibility exists that the site is intact as the 2006 heritage study by Fourie (2006) recorded the site.

The identified sites dating to 1943, 1944, 1957 and 1961 exceed 60 years of age and are therefore protected by the NHRA 25 of 1999. The sites dating to 1968 and 1976 might not be visible on earlier data sources, which means that these sites might exceed 60 years as well. It should also be noted that demolished sites might be associated with surface/subsurface cultural material remains and would be protected by the NHRA 25 of 1999 as well.

Table 10 : Buildings Identified

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B001	Building - 1943	Steenekoppie 153 IQ	45/153	Surface remains	0.68	-26.000246	27.546817
B002	Building - 1943	Steenekoppie 153 IQ	45/153	Surface remains	0.92	-25.999268	27.548251
B003	Building - 1968	Steenekoppie 153 IQ	45/153	Surface remains	0.67	-25.999347	27.547197
B004	Hut - 1944	Wolvekrans 156 IQ	1/156	Demolished	2.15	-26.098787	27.570117
B005	Structure - 1944	Wolvekrans 156 IQ	1/156	Demolished	1.80	-26.098253	27.571498
B006	Ruin - 1944	Delarey 164 IQ	22/164;17/164	Surface remains	4.32	-26.070603	27.610415
B007	Hut - 1944	Vlakplaats 160 IQ	267/160	Surface remains	10.18	-26.073146	27.642931
B008	Building - 1944	Vlakplaats 160 IQ	1/160;11/160; 267/160	Surface remains	3.81	26.074572	27.638741
B009	Mining - 1944	Delarey 171 IQ	1/168; RE/171; 1/171; 2/171;	Demolished	4.26	-26.049233	27.617313
B010	Ruin - 1944	Delarey 164 IQ	53/164;54/164	Demolished	5.71	-26.046718	27.598515

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B011	Mining - 1944	Delarey 164 IQ	54/164	Demolished	2.57	-26.048661	27.600560
B012	Grave/Ceme tery - 1944	Delarey 168 IQ	1/168	Unknown	3.16	-26.041909	27.626095
B013	Hut - 1944	Delarey 168 IQ	1/168; RE/168	Demolished	14.67	-26.040207	27.624734
B014	Building - 1944	Delarey 164 IQ	54/164	Demolished	2.03	-26.047318	27.602350
B015	Hut - 1944	Delarey 164 IQ	53/164; RE/154	Demolished	10.66	-26.031773	27.590649
B016	Mining - 1944	Wolvekrans 156 IQ	1/156	Demolished	4.24	-26.052769	27.570562
B017	Grave/Cemetery - 1944	Wolvekrans 156 IQ	110/156	Unknown	3.27	-26.043126	27.575763
B018	Ruin - 1944	Wolvekrans 156 IQ	110/156	Demolished	6.62	-26.043730	27.577905
B019	Mining - 1944	Wolvekrans 156 IQ	110/156	Surface remains	2.85	-26.040349	27.574777
B020	Structure - 1944	Wolvekrans 156 IQ	110/156	Demolished	2.39	-26.043410	27.573758
B021	Mining - 1944	Wolvekrans 156 IQ	110/156;1/156	Surface remains	3.41	-26.040908	27.571771
B022	Structure - 1944	Wolvekrans 156 IQ	1/156	Demolished	3.50	-26.044902	27.567249
B023	Hut - 1944	Wolvekrans 156 IQ	1/156; 6/169	Demolished	4.61	-26.044090	27.563350
B024	Hut - 1944	Malonys Eye 169 IQ	6/169	Demolished	3.70	-26.036917	27.571922
B025	Hut - 1944	Malonys Eye 169 IQ	6/169	Demolished	9.70	-26.037221	27.567081
B026	Hut - 1944	Malonys Eye 169 IQ	6/169	Demolished	5.12	-26.033840	27.563399
B027	Hut - 1944	Malonys Eye 169 IQ	6/169; 3/169	Demolished	6.03	-26.030046	27.572898
B028	Building - 1944	Malonys Eye 169 IQ	4/169	Surface remains	5.15	-26.023804	27.564674
B029	Stone wall - 1944	Malonys Eye 169 IQ	RE/169	Demolished	15.80	-26.022886	27.573440
B030	Hut - 1944	Steenekoppie 153 IQ	52/153;81/153	Demolished	5.48	-26.013276	27.564722
B031	Building - 1944	Steenekoppie 153 IQ	44/153; RE/10/153	Demolished	3.22	-26.004371	27.538539
B032	Hut - 1944	Steenekoppie 153 IQ	45/153	Surface remains	3.17	-26.002944	27.548468
B033	Building - 1944	Steenekoppie 153 IQ	45/153	Surface remains	3.05	-26.002797	27.546748
B034	Building - 1944	Steenekoppie 153 IQ	45/153	Demolished	1.88	-26.002101	27.545270
B035	Hut - 1944	Wolvekrans 156 IQ	110/156	Demolished	5.04	-26.045157	27.574913
B036	Hut - 1944	Wolvekrans 156 IQ	1/156	Demolished	9.51	-26.072713	27.575139
B037	Mining - 1957	Wolvekrans 156 IQ	1/156	Demolished	6.40	-26.095495	27.580580
B038	Hut - 1957	Wolvekrans 156 IQ	1/156	Demolished	2.23	-26.070032	27.570013
B039	Mining - 1957	Wolvekrans 156 IQ	1/156	Demolished	33.34	-26.052999	27.547931
B040	Hut - 1957	Wolvekrans 156 IQ	1/156	Demolished	2.85	-26.048877	27.552321
B041	Mining - 1957	Wolvekrans 156 IQ	1/156	Demolished	2.80	-26.050909	27.557698
B042	Hut - 1957	Wolvekrans 156 IQ	1/156	Demolished	2.48	-26.043814	27.566058
B043	Hut - 1957	Wolvekrans 156 IQ	1/156	Demolished	9.75	-26.049265	27.564571
B044	Building - 1957	Wolvekrans 156 IQ	1/156	Surface remains	10.64	-26.053996	27.567300
B045	Building - 1957	Wolvekrans 156 IQ	1/156	Demolished	2.79	-26.052517	27.564462
B046	Mining - 1957	Wolvekrans 156 IQ	1/156	Demolished	11.69	-26.054926	27.562619
B047	Mining - 1957	Wolvekrans 156 IQ	1/156	Demolished	5.70	-26.053467	27.573116
B048	Building - 1957	Wolvekrans 156 IQ	1/156	Demolished	1.55	-26.060284	27.571905

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B049	Hut - 1957	Wolvekrans 156 IQ	74/156	Demolished	1.93	-26.058091	27.583955
B050	Building - 1957	Wolvekrans 156 IQ	72/156	Demolished	0.96	-26.056150	27.584144
B051	Hut - 1957	Wolvekrans 156 IQ	83/156;85/156; 86/156	Surface remains	2.68	-26.066369	27.580442
B052	Hut - 1957	Wolvekrans 156 IQ	86/156;87/156	Demolished	1.50	-26.068745	27.584301
B053	Hut - 1957	Wolvekrans 156 IQ	15/156;17/156; 15/156;20/156; 21/156;22/156; 7/16	Surface remains	24.91	-26.067240	27.593403
B054	Hut - 1957	Delarey 164 IQ	50/164;16/164; 16/164	Surface remains	11.76	-26.069874	27.602624
B055	Hut - 1957	Delarey 164 IQ	22/164	Surface remains	2.41	-26.071251	27.611909
B056	Hut - 1957	Wolvekrans 156 IQ	48/156;19/156	Surface remains	5.51	-26.071679	27.588125
B057	Hut - 1957	Wolvekrans 156 IQ	9/156; 10/156	Demolished	3.40	-26.056743	27.588555
	Mining - 1957	Delarey 164 IQ	3/168;30/164; 38/164;	Surface remains	21.69	-26.059474	27.610754
B059	Building - 1957	Delarey 164 IQ	16/164;17/164	Surface remains	4.36	-26.070760	27.606701
B060	Hut - 1957	Vlakplaats 160 IQ	20/160;11/160	Surface remains	1.56	-26.073442	27.637569
B061	Building - 1957	Vlakplaats 160 IQ	126/160;20/160	Surface remains	1.65	-26.068013	27.631291
B062	Building - 1957	Vlakplaats 160 IQ	135/160;136/160	Demolished	2.79	-26.061160	27.639766
B063	Hut - 1957	Vlakplaats 160 IQ	134/160;136/160; 137/160	Demolished	1.13	-26.063673	27.638589
B064	Building - 1957	Vlakplaats 160 IQ	129/160;127/160; 131/160	Surface remains	5.69	-26.062243	27.633980
B065	Hut - 1957	Vlakplaats 160 IQ	147/160;149/160	Surface remains	1.98	-26.067912	27.623988
B066	Building - 1957	Vlakplaats 160 IQ	151/160	Surface remains	1.44	-26.067851	27.626963
B067	Hut - 1957	Vlakplaats 160 IQ	148/160;149/160; 150/160;151/160	Surface remains	1.55	-26.064833	27.624314
B068	Building - 1957	Vlakplaats 160 IQ	146/160;148/160	Demolished	1.21	-26.061850	27.621054
B069	Mining - 1957	Delarey 164 IQ	46/164;47/164; 56/164;	Demolished	11.28	-26.059388	27.620376
B070	Building - 1957	Vlakplaats 160 IQ	140/160;141/160	Surface remains	1.11	-26.067154	27.615754
B071	Hut - 1957	Delarey 171 IQ	1/171	Demolished	4.05	-26.054758	27.618148
B072	Hut - 1957	Delarey 171 IQ	RE/171	Demolished	2.46	-26.054575	27.623240
B073	Hut - 1957	Delarey 171 IQ	RE/171	Demolished	1.39	-26.053926	27.626778
B074	Building - 1957	Delarey 171 IQ	RE/171	Surface remains	2.50	-26.053266	27.630388
B075	Hut - 1957	Delarey 171 IQ	1/168; RE/171	Demolished	16.72	-26.045149	27.629182
B076	Hut - 1957	Delarey 168 IQ	1/168	Surface remains	16.04	-26.042146	27.619580
B077	Hut - 1957	Delarey 168 IQ	1/168	Demolished	3.33	-26.045938	27.617263
B078	Hut - 1957	Delarey 171 IQ	1/171	Demolished	4.87	-26.048328	27.612901
B079	Building - 1957	Delarey 168 IQ	1/168	Surface remains	9.37	-26.037393	27.613130
B080	Building - 1957	Delarey 168 IQ	1/168	Demolished	1.47	-26.040088	27.609980
B081	Building - 1957	Delarey 168 IQ	1/168	Surface remains	1.44	-26.040597	27.614950
B082	Hut - 1957	Wolvekrans 156 IQ	110/156; RE/154	Demolished	6.10	-26.043848	27.581083
B083	Mining - 1957	Wolvekrans 156 IQ	110/156;66/156 ;65/15	Surface remains	66.40	-26.049421	27.583120

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B084	Mining - 1957	Delarey 164 IQ	53/164	Demolished	4.21	-26.043021	27.588811
B085	Building - 1957	Wallis Haven 154 IQ	RE/154;53/164; 3/169	Surface remains	47.18	-26.038316	27.583743
B086	Building - 1957	Wallis Haven 154 IQ	RE/154	Demolished	1.28	-26.032164	27.588052
B087	Structure - 1957	Malonys Eye 169 IQ	6/169	Demolished	1.58	-26.035602	27.568168
B088	Building - 1957	Malonys Eye 169 IQ	6/169	Surface remains	2.16	-26.027624	27.561904
B089	Building - 1957	Malonys Eye 169 IQ	6/169; 4/169	Surface remains	2.17	-26.024706	27.561282
B090	Building - 1957	Malonys Eye 169 IQ	4/169	Surface remains	1.73	-26.025302	27.563870
B091	Building - 1957	Steenekoppie 153 IQ	81/153; RE/169	Demolished	1.47	-26.015530	27.565507
B092	Hut - 1957	Steenekoppie 153 IQ	81/153	Demolished	13.13	-26.022939	27.549118
B093	Hut - 1957	Steenekoppie 153 IQ	82/153	Demolished	4.43	-26.015154	27.547920
B094	Hut - 1957	Steenekoppie 153 IQ	82/153	Surface remains	1.76	-26.010561	27.544814
B095	Building - 1957	Steenekoppie 153 IQ	82/153	Surface remains	1.91	-26.012282	27.556766
B096	Building - 1957	Steenekoppie 153 IQ	52/156	Surface remains	1.70	-26.008583	27.566386
B097	Building - 1957	Malonys Eye 169 IQ	14/169;52/156	Surface remains	26.78	-26.010729	27.572328
B098	Hut - 1957	Malonys Eye 169 IQ	14/169	Demolished	2.23	-26.013633	27.583026
B099	Building - 1957	Malonys Eye 169 IQ	14/169	Surface remains	1.33	-26.011398	27.579675
B100	Building - 1957	Malonys Eye 169 IQ	14/169	Demolished	0.81	-26.013560	27.579609
B101	Hut - 1957	Steenekoppie 153 IQ	44/153;RE/10/153	Demolished	4.12	-26.006527	27.537175
B102	Building - 1957	Steenekoppie 153 IQ	RE/10/153	Surface remains	1.24	-26.004290	27.535758
B103	Hut - 1957	Vlakplaats 160 IQ	267/160	Surface remains	9.87	-26.078149	27.642745
B104	Hut - 1957	Delarey 164 IQ	54/164	Demolished	3.78	-26.049473	27.597773
B105	Mining - 1957	Delarey 164 IQ	7/164; 54/164	Demolished	22.19	-26.050949	27.592873
B106	Building - 1957	Delarey 164 IQ	53/164;54/164	Surface remains	1.20	-26.045792	27.600662
B107	Building - 1976	Steenekoppie 153 IQ	82/153;45/153	Surface remains	5.45	-26.007424	27.551799
B108	Building - 1976	Steenekoppie 153 IQ	45/153	Surface remains	2.56	-26.004512	27.550416
B109	Building - 1976	Malonys Eye 169 IQ	4/169	Demolished	0.78	-26.023297	27.562118
B110	Grave/Ceme tery - 1976	Steenekoppie 153 IQ	52/153;81/153	Unknown	1.25	-26.028814	27.545786
B111	Building - 1976	Malonys Eye 169 IQ	6/169	Surface remains	1.67	-26.028029	27.559985
B112	Building - 1976	Malonys Eye 169 IQ	6/169	Surface remains	1.03	-26.032532	27.557954
B113	Mining - 1961	Malonys Eye 169 IQ	6/169	Surface remains	15.27	-26.034240	27.556055
B114	Building - 1961	Steenekoppie 153 IQ	82/153	Surface remains	5.06	-26.012352	27.555240
B115	Grave/Ceme tery - 1976	Malonys Eye 169 IQ	14/169	Unknown	0.85	-26.011978	27.572103
B116	Building - 1961	Malonys Eye 169 IQ	14/169	Surface remains	1.75	-26.014767	27.580981
B117	Building - 1961	Malonys Eye 169 IQ	14/169	Demolished	2.10	-26.014663	27.583408
B118	Mining - 1961	Wolvekrans 156 IQ	110/156;64/156; 65/156	Demolished	4.49	-26.048924	27.578877

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B119	Mining - 1961	Wolvekrans 156 IQ	110/156;1/156	Surface remains	17.04	-26.047041	27.575543
B120	Mining - 1961	Wolvekrans 156 IQ	1/156	Demolished	28.69	-26.050113	27.561712
B121	Building - 1961	Wolvekrans 156 IQ	1/156	Surface remains	6.12	-26.055293	27.569574
B122	Building - 1976	Wolvekrans 156 IQ	77/156;79/156	Surface remains	2.37	-26.061571	27.577634
B123	Building - 1976	Wolvekrans 156 IQ	76/156;78/156	Surface remains	1.94	-26.059633	27.583249
B124	Building - 1961	Wolvekrans 156 IQ	68/156;70/156	Demolished	2.73	-26.053186	27.582190
B125	Building - 1961	Wolvekrans 156 IQ	64/156;67/156; 1/156	Demolished	2.84	-26.051911	27.576631
B126	Building - 1976	Wolvekrans 156 IQ	80/156;82/156	Surface remains	2.44	-26.062839	27.585181
B127	Building - 1976	Wolvekrans 156 IQ	12/156;14/156; 16/156	Surface remains	8.95	-26.061651	27.588097
B128	Building - 1976	Wolvekrans 156 IQ	11/156	Demolished	1.69	-26.059989	27.591038
B129	Building - 1976	Delarey 164 IQ	19/164	Surface remains	1.68	-26.069783	27.598044
B130	Building - 1961	Wolvekrans 156 IQ	9/156; 10/156	Demolished	2.53	-26.055858	27.588628
B131	Building - 1961	Wolvekrans 156 IQ	110/156;66/156	Demolished	2.64	-26.050000	27.583358
B132	Building - 1976	Wolvekrans 156 IQ	44/156	Surface remains	1.84	-26.075867	27.592210
B133	Building - 1976	Vlakplaats 160 IQ	141/160; 142/160; 143/160;	Demolished	6.72	-26.066308	27.619130
B134	Building - 1961	Delarey 164 IQ	30/164; 31/164; 32/164;	Surface remains	19.46	-26.061518	27.607388
B135	Building - 1976	Delarey 164 IQ	7/164; 31/164; 32/164	Demolished	2.65	-26.062382	27.603559
B136	Building - 1976	Vlakplaats 160 IQ	10/160; 201/160; 202/160; 291/160	Surface remains	8.13	-26.073452	27.630417
B137	Building - 1976	Vlakplaats 160 IQ	10/160	Demolished	2.47	-26.070116	27.627020
B138	Building - 1976	Vlakplaats 160 IQ	144/160; 146/160; 45/164	Demolished	1.69	-26.061695	27.619153
B139	Ruin - 1976	Vlakplaats 160 IQ	201/160; 202/160; 291/160; 20/160	Demolished	1.75	-26.070717	27.630215
B140	Mining - 1976	Vlakplaats 160 IQ	201/160; 10/160	Surface remains	3.44	-26.071738	27.629292
B141	Building - 1961	Vlakplaats 160 IQ	1/160; 12/160; 267/160	Demolished	5.06	-26.069112	27.638180
B142	Building - 1976	Vlakplaats 160 IQ	1/160	Surface remains	2.01	-26.071332	27.639763
B143	Building - 1961	Vlakplaats 160 IQ	128/160; 126/160; 20/160; 128/160	Surface remains	2.36	-26.067526	27.632737
B144	Building - 1976	Vlakplaats 160 IQ	267/160; 1/160	Surface remains	1.59	-26.073379	27.641221
B145	Building - 1976	Vlakplaats 160 IQ	267/160	Surface remains	1.58	-26.074245	27.645147
B146	Building - 1976	Vlakplaats 160 IQ	131/160; 133/160	Surface remains	5.11	-26.059721	27.636054
B147	Building - 1961	Delarey 171 IQ	RE/171	Demolished	2.28	-26.054389	27.621284
B148	Building - 1976	Delarey 171 IQ	1/168; RE/171	Demolished	6.32	-26.046958	27.627417
B149	Building - 1976	Delarey 171 IQ	RE/171	Demolished	1.68	-26.048362	27.631632
B150	Building - 1976	Delarey 168 IQ	1/168	Demolished	2.76	-26.046484	27.615296
B151	Building - 1961	Delarey 168 IQ	1/168	Demolished	0.73	-26.047281	27.618290
B152	Building - 1976	Delarey 168 IQ	1/168	Demolished	6.17	-26.043251	27.615731

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B153	Building - 1976	Delarey 168 IQ	1/168	Surface remains	2.42	-26.041481	27.613446
B154	Building - 1976	Delarey 168 IQ	1/168	Demolished	1.68	-26.040070	27.612208
B155	Building - 1976	Delarey 168 IQ	1/168	Demolished	2.42	-26.039267	27.616001
B156	Building - 1976	Delarey 164 IQ	53/164	Surface remains	11.01	-26.040779	27.593299
B157	Building - 1976	Delarey 168 IQ	3/168; 53/164	Demolished	2.27	-26.042476	27.602013
B158	Building - 1976	Delarey 168 IQ	1/168; 3/168	Surface remains	1.41	-26.042680	27.607358
B159	Building - 1961	Delarey 164 IQ	53/164	Surface remains	1.46	-26.044950	27.600031
B160	Mining - 1961	Delarey 164 IQ	54/164	Demolished	6.45	26.050888	27.601203
B161	Mining - 1961	Delarey 164 IQ	54/164	Demolished	2.57	26.050128	27.595810
B162	Mining - 1961	Wolvekrans 156 IQ	1/156	Demolished	53.23	26.055446	27.552823
B163	Building - 1961	Steenekoppie 153 IQ	45/153	Demolished	3.53	-26.000547	27.548335
B164	Building - 1961	Malonys Eye 169 IQ	4/169	Demolished	1.78	-26.021866	27.565187
B165	Building - 1961	Malonys Eye 169 IQ	3/169	Demolished	0.64	-26.028925	27.579938
B166	Building - 1961	Malonys Eye 169 IQ	3/169	Demolished	0.67	-26.031198	27.579808
B167	Building - 1961	Malonys Eye 169 IQ	3/169	Demolished	0.59	-26.031974	27.577806
B168	Building - 1961	Malonys Eye 169 IQ	6/169	Surface remains	0.81	-26.033530	27.568292
B169	Building - 1961	Malonys Eye 169 IQ	6/169	Surface remains	0.46	-26.032016	27.566018
B170	Building - 1961	Wolvekrans 156 IQ	1/156; 6/169	Demolished	1.04	-26.044359	27.561193
B171	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.62	-26.053484	27.571649
B172	Building - 1961	Delarey 164 IQ	54/164	Demolished	0.69	-26.048743	27.594320
B173	Building - 1961	Delarey 164 IQ	54/164	Demolished	0.47	-26.050842	27.598104
B174 B175	Building - 1961	Delarey 164 IQ Wolvekrans 156 IQ	7/164; 54/164 69/156; 70/156; 71/156; 72/156	Demolished Surface remains	1.33 0.72	26.052664 26.055223	27.602342 27.581160
B176	Building - 1961	Wolvekrans 156 IQ	69/156; 71/156; 1/156	Surface remains	0.54	-26.055334	27.576693
B177	Building - 1961	Wolvekrans 156 IQ	75/156	Surface remains	0.50	-26.059770	27.576876
B178	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.33	-26.056634	27.566461
B179	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.51	-26.058789	27.571446
B180	Building - 1961	Wolvekrans 156 IQ	73/156; 75/156	Demolished	0.35	-26.058619	27.579829
B181	Building - 1961	Wolvekrans 156 IQ	76/156; 78/156	Demolished	0.68	-26.060135	27.584776
B182	Building - 1961	Vlakplaats 160 IQ	144/160; 146/160	Demolished	0.49	-26.062608	27.619737
B183	Building - 1961	Wolvekrans 156 IQ	79/156; 80/156	Surface remains	0.80	-26.062952	27.581382
B184	Building - 1961	Wolvekrans 156 IQ	86/156	Demolished	0.51	-26.068520	27.583148
B185 B186	Building - 1961	Delarey 164 IQ Delarey 164 IQ	19/164; 7/164 34/164; 35/164; 16/164; 17/164	Surface remains Demolished	1.19 1.07	26.068425 26.067736	27.598430 27.606333
B187	Building - 1961	Delarey 164 IQ	50/164	Demolished	0.36	-26.067954	27.604324
B188	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.65	-26.084479	27.576521
B189	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.55	-26.090980	27.577524
B190	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.72	-26.090250	27.576622

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B191	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.84	-26.098266	27.573140
B192	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.86	-26.096132	27.565247
B189	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.55	-26.090980	27.577524
B190	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.72	-26.090250	27.576622
B191	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.84	-26.098266	27.573140
B192	Building - 1961	Wolvekrans 156 IQ	1/156	Demolished	0.86	-26.096132	27.565247

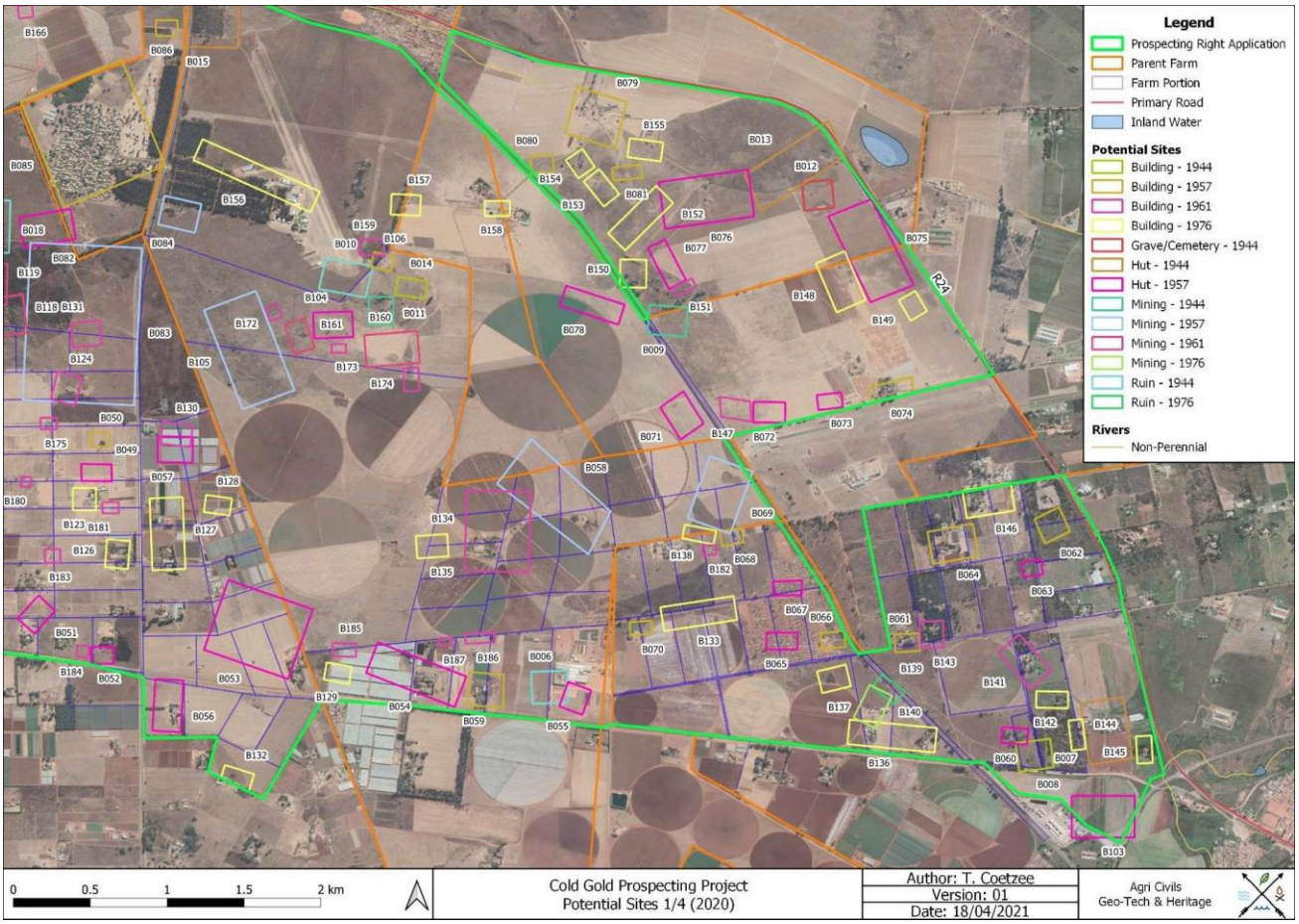

Figure 11 : Potential Sites – 1/4

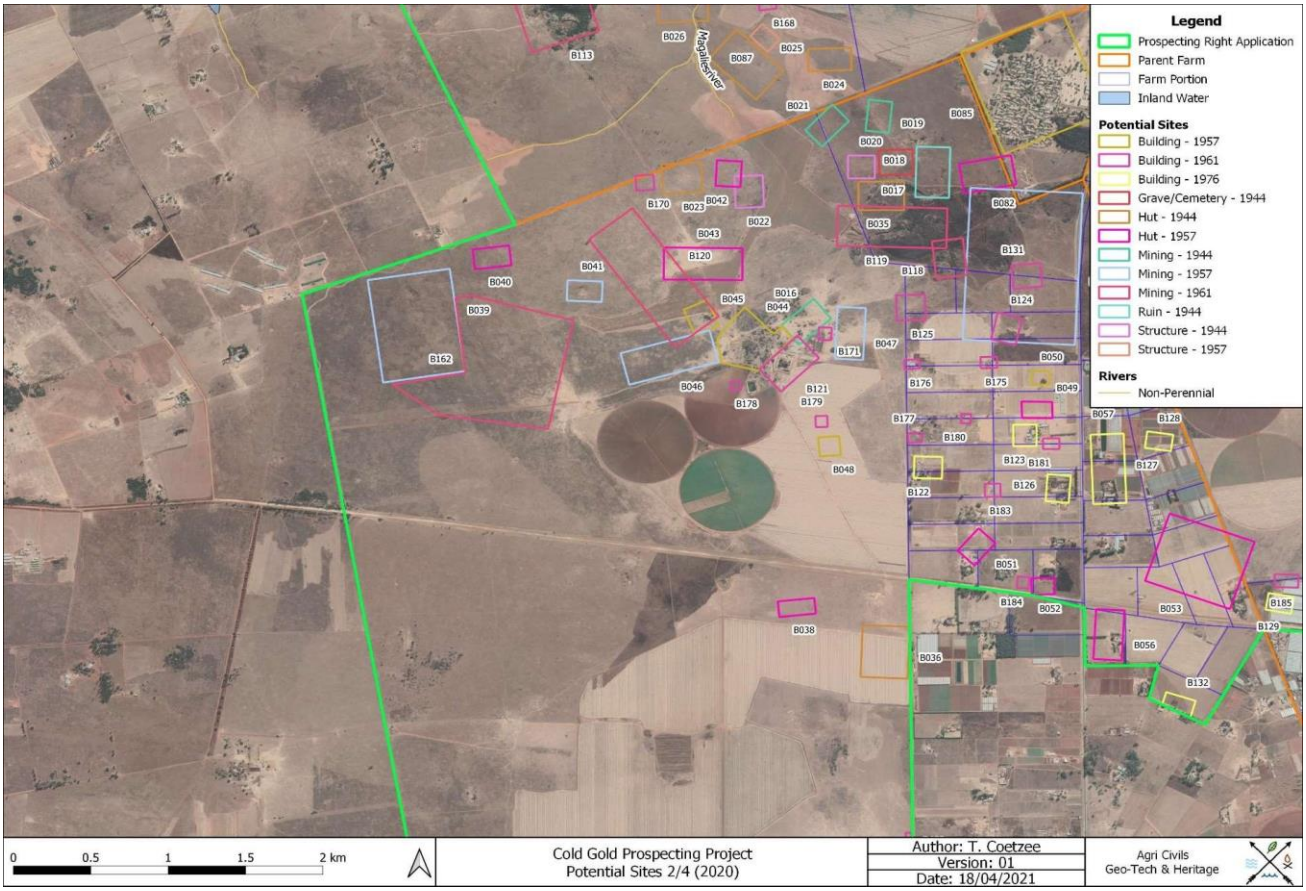

Figure 12 : Potential Sites – 2/4

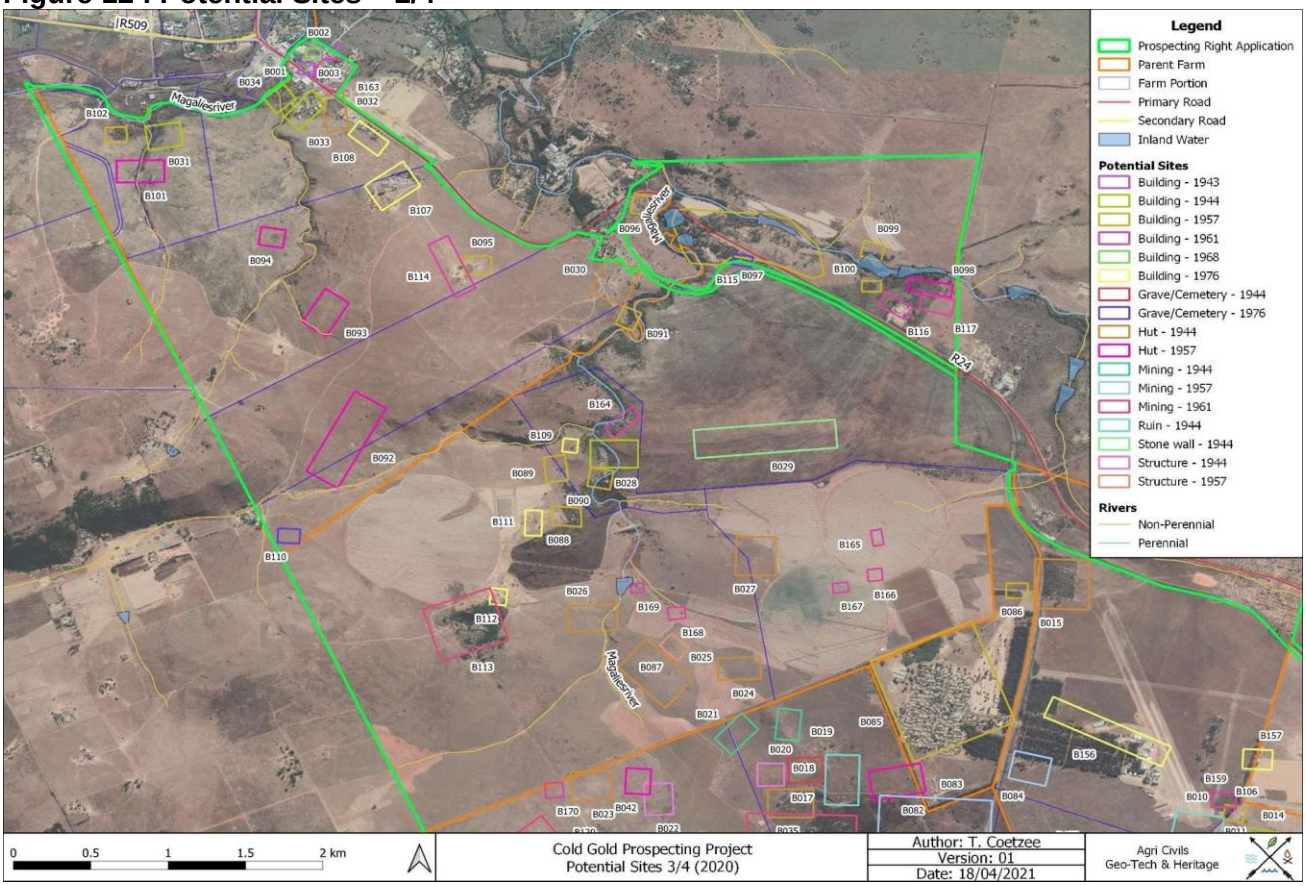

Figure 13 : Potential Sites – 3/4

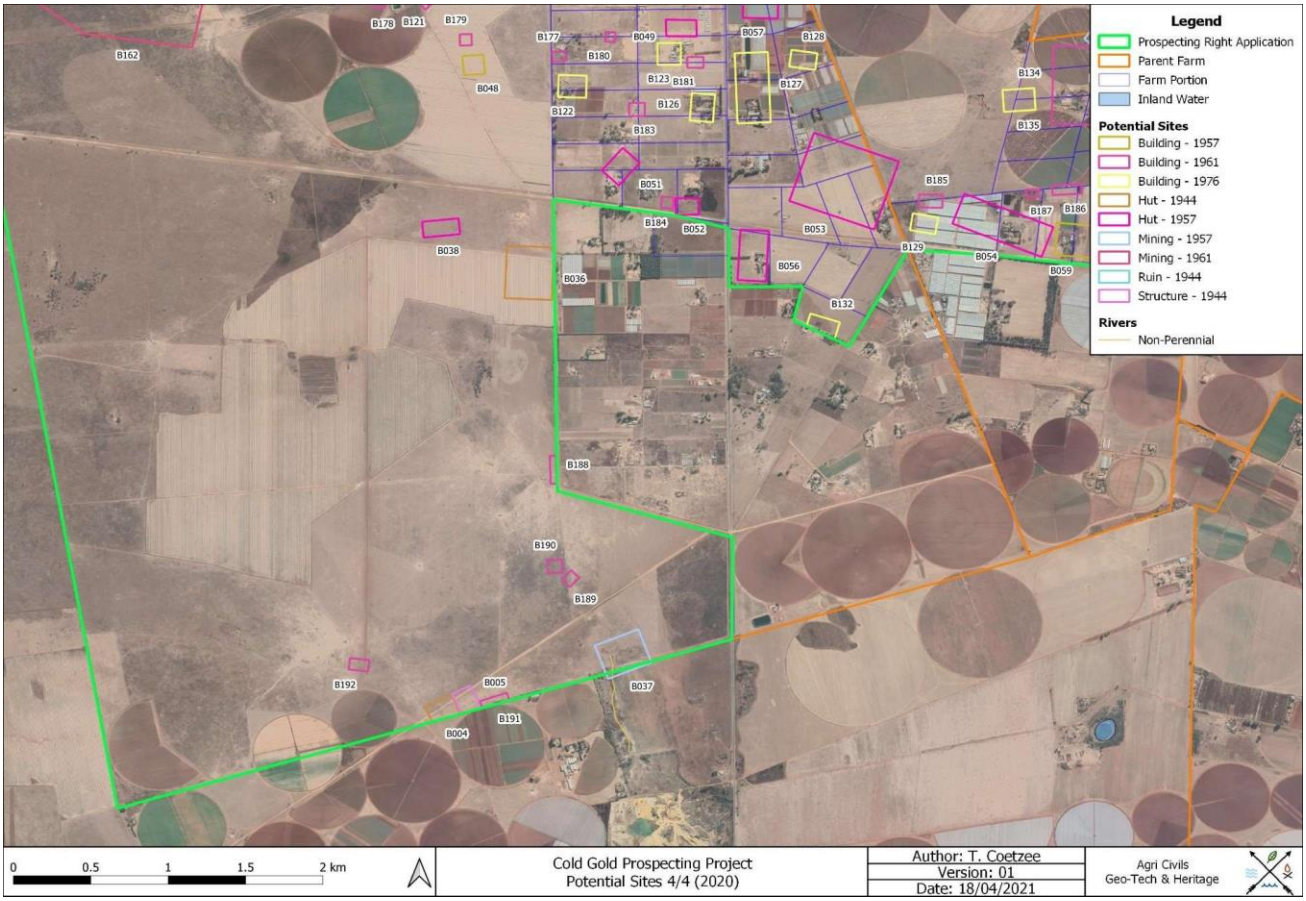

Figure 14 : Potential Sites – 4/4

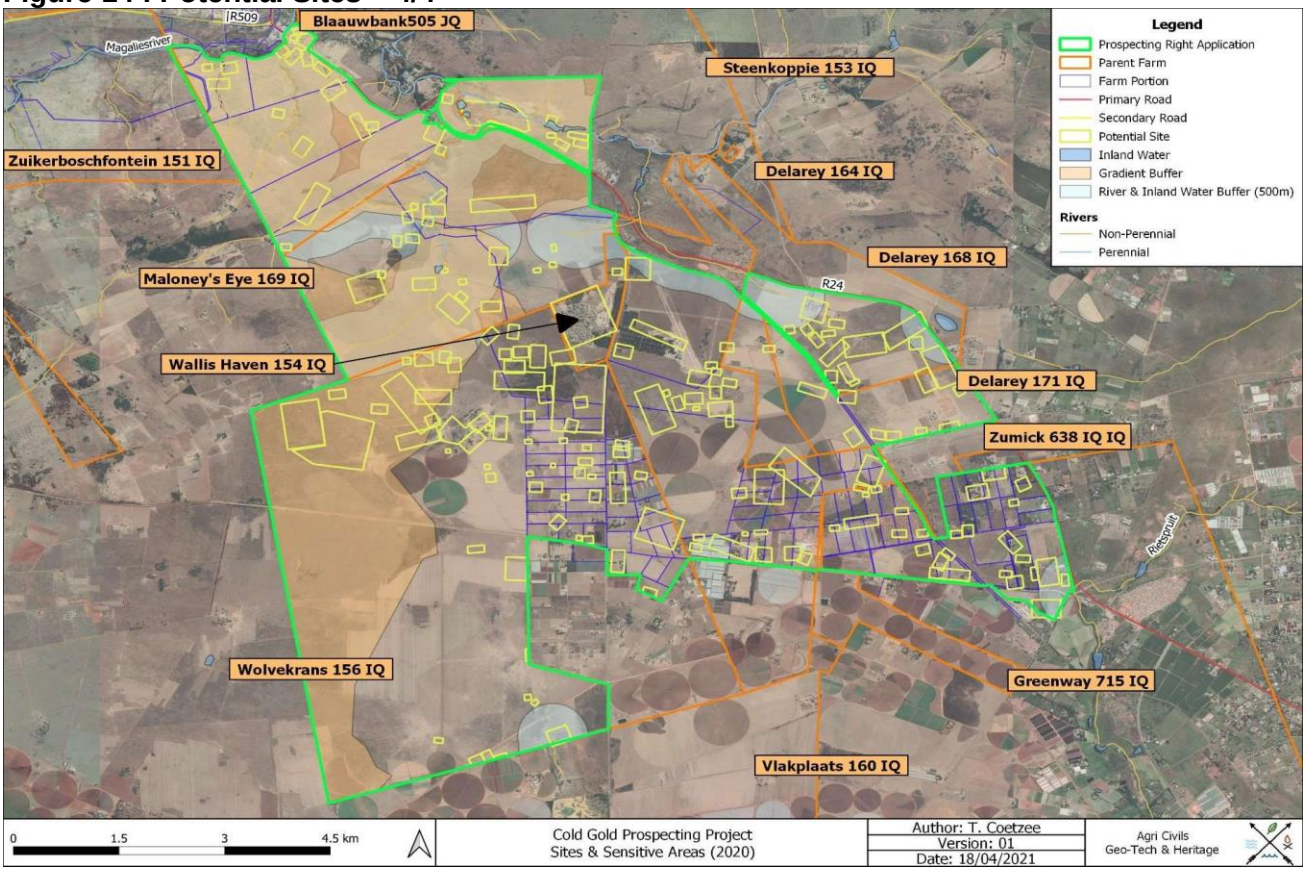

Figure 15: Sensitive Areas

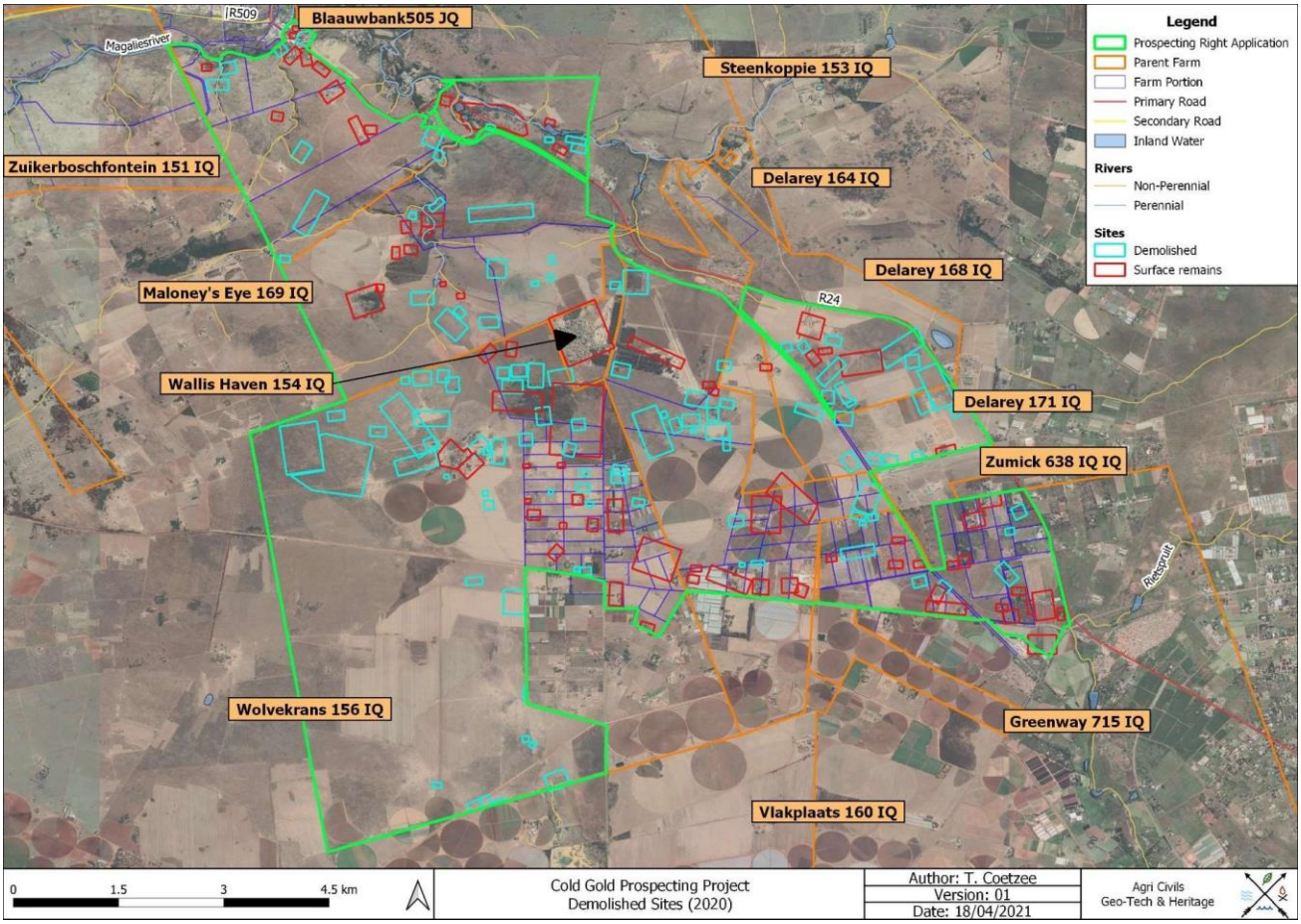

Figure 16: Demolished Sites.

Noise and Dust Sources

Noise sources and baseline

Prospecting and associated activities often emit significant noise levels which can become a nuisance or health risk when not properly managed. This impact may affect not only to the prospecting area, but also to the surrounding land users and occupiers. The most sensitive receptors identified for the project area is the landowners and lawful occupiers of the study area itself, surrounding communities including land users, mine workers, industry, residential areas and permanent small holding homesteads and settlements. The local area is predominantly occupied by sand mining, agricultural and residential land uses.

The main noise generation activities of the proposed activities during all phases are:

Construction phase:

- Construction of temporary Site camp.

Operational phase:

- Transportation of materials.
- Drilling; and
- Loading and off-loading of equipment and materials.

Closure or care and maintenance phase:

- Limited number of vehicles moving around the site; and
- Decommissioning of temporary infrastructure.

Noise generation can be expected on the proposed site due to various activities and actions as indicated above. Noise levels may possibly exceed allowed limits for noise as indicated in SANS 10103: 2008. The closest sensitive receptor is the homesteads on and immediately adjacent to the study area. Due to the close proximity of the homesteads to prospecting activities, mitigation measures are required to be implemented to reduce this impact. Mitigation measures may include keeping noisy activities to normal working hours and not over weekends or public holidays and maintaining machinery and vehicles in order to avoid unnecessary excessive noise emanating. It is also recommended that consultations be held with affected parties in order to establish an acceptable schedule of noisy activities.

Dust Sources and baseline

The following sensitive receptors of dust have been identified and it is expected that these receptors may be affected by dust fallout and other air pollutants, resulting from the proposed prospecting activities:

- Landowners and lawful occupiers of the study area.
- Landowners and lawful occupiers of the properties adjacent to the study area.
- Surrounding communities including land users, mine workers, industry, residential areas and permanent agricultural holding homesteads and settlements

Aesthetic Quality

It is important to bear in mind that determining a visual resource in absolute terms is not achievable. Evaluating a landscape's visual quality is both complex and challenging, as many quality standards apply and it is largely subjective, with individuals basing evaluations on experiences, their social level and their cultural background. Furthermore, natural features are inherently variable. Climate, season, atmospheric conditions, region and sub-region all affect the attributes that comprise the landscape.

Visual Absorption Capacity (VAC) can be described as the ability of an area to absorb physical modifications. Factors affecting VAC include *inter alia*, vegetation, the built environment, existing

infrastructure and topography. In terms of these factors the receiving environment is perceived to have a low to medium VAC.

The prospecting activities will not modify the physical characteristics of the landscape significantly and can easily be rehabilitated upon completion.

Socio-Economic Environment

Information in this section was obtained from the Magaliesburg Precent Plan (2011), Draft Magaliesburg Precent Plan (2020) and the Mogale City Spatial Development Framework (2014)

Population Dynamics and Settlements

Approximately 11 727 people currently reside within the Magaliesburg Sub Region, comprising of 4 059 households within an average household size of 2.9 people per household. These figures are expected to increase to 15 166 people and 5 406 households in the in the Sub Region by the year 2035.

Approximately 7 488 people currently reside within the Magaliesburg Precinct, comprising of 2 458 households within an average household size of 3 people per household. These figures are expected to increase to 9 684 people and 3 274 households in the Precinct by the year 2035.

Table 11 : Estimated Population Growth Sub-Region

Magaliesburg Sub Region	2020	2021	2022	2025	2030	2035
Population	11 727	11 930	12 136	12 777	13 920	15 166
Household	4 059	4 137	4 217	4 466	4 914	5 406

Table 12 : Estimated Population Growth precinct

Magaliesburg Precinct	2020	2021	2022	2025	2030	2035
Population	7 488	7 618	7 884	8 159	8 889	9 684
Household	2 458	2 505	2 553	2 704	2 975	3 274

The population and household profiles are based on data from the Census 2011 and Quantec. The population growth projections are based on a five-year historic growth rate of 1.73% per annum and a household growth rate of 1.93% for the Precinct. The growth rates were applied to the population and household figures to project the future population growth utilising 2011 as the base year.

Opportunities and education.

33% of those interviewed were employed (either fulltime or part time). This reflects an unemployment rate of 67% in the study area. The study determined that the average distance that people had to travel to access employment opportunities is 45km.

It can therefore be assumed that employment opportunities in Magaliesburg are very low or that there is a lack of skills of people residing in the area. The latter statement is supported by a number of respondents stating that technical skills need to be introduced.

It was also determined from the study that job creation initiatives should also shift focus from blue collar to white collar industries. Training initiatives should also have a larger emphasis on farm workers and dwellers as they are perceived to be the most vulnerable in terms of job opportunities and having access to formal education. Of those interviewed that were employed, the majority were semi-skilled employees such as shop workers and domestic workers. 80% of the respondents also indicated that they were unsatisfied with education facilities in their area. Schools should be equipped with proper facilities, especially highly specialised facilities such as proper laboratories.

Employment and Economics

Detailed employment or economics statistics are not available for the study area. To address this gap, a broad land use survey of the study area was undertaken to get a sense of what economic activity currently exists. A questionnaire was also distributed to the local business community to establish current dynamics and perceptions. Thirdly, overall StatsSA statistics for the Mogale City area were used to obtain some level of quantitative estimate of activity in the area.

The focus of the business survey was to gain an understanding into the challenges and opportunities experienced by business/farm owners and managers. This would ensure an alignment between the Magaliesburg Precinct Plan objectives and the day-to-day operations businesses and farms in the area.

The survey comprises a total of 27 businesses in the area. From Figure 17, it can be seen that the majority of the surveyed businesses are trading in the Tourism, accommodation, and outdoor activities sector (61%).

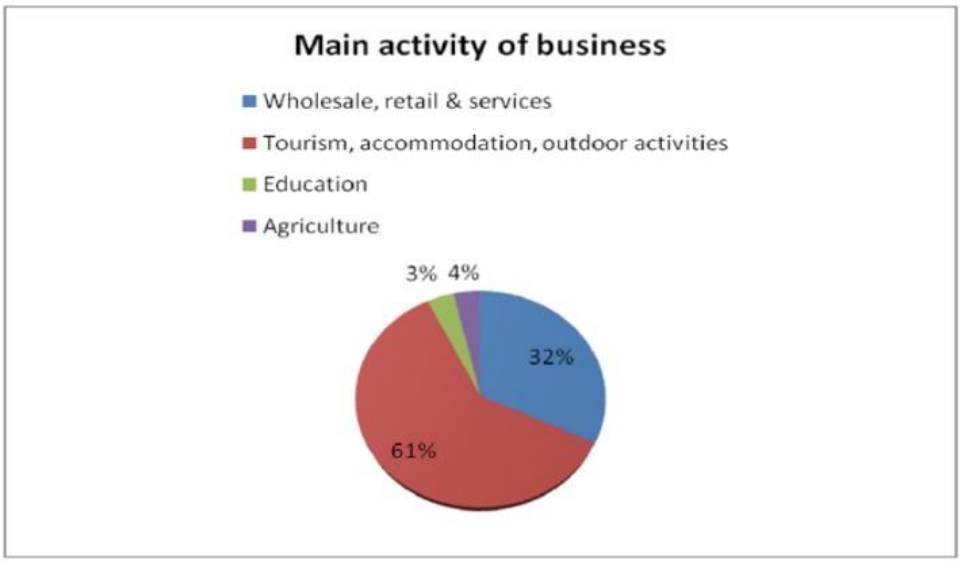

Figure 17 : Main Activity of Business

The survey indicated that the average number of years that all existing businesses operating in the area is 10 years. The reasons for locating in Magalies is indicated in Figure 18.

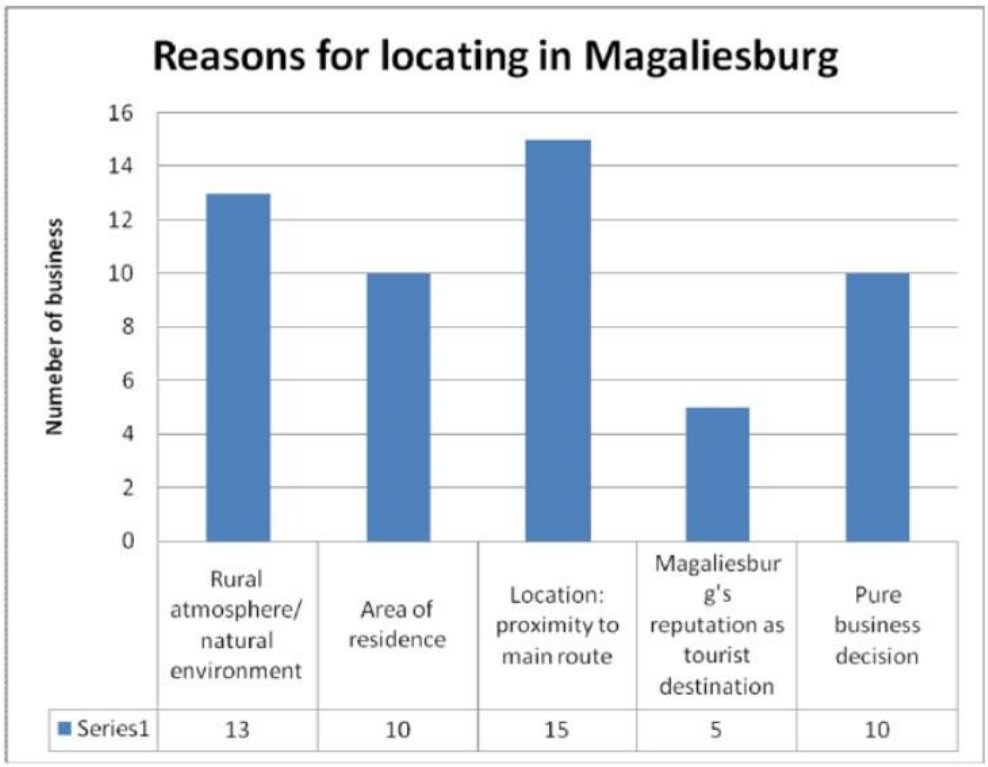

Figure 18 : Reasons for locating to Magaliesburg

In order to establish movement patterns in and out of the area, surveyed businesses were also asked to indicate where the majority of their clients were based, ***Figure 19*** displays these results. Local residents and businesses account for 34% of the customer base, while the remaining 66% is customers located outside the study area. This gives us an indication that there are significant

movement patterns of customers moving into and outside the area. This also indicates that the majority income generated by the private sector comes from outside the study area, meaning that external factors will have a bearing on the local economy of Magaliesburg.

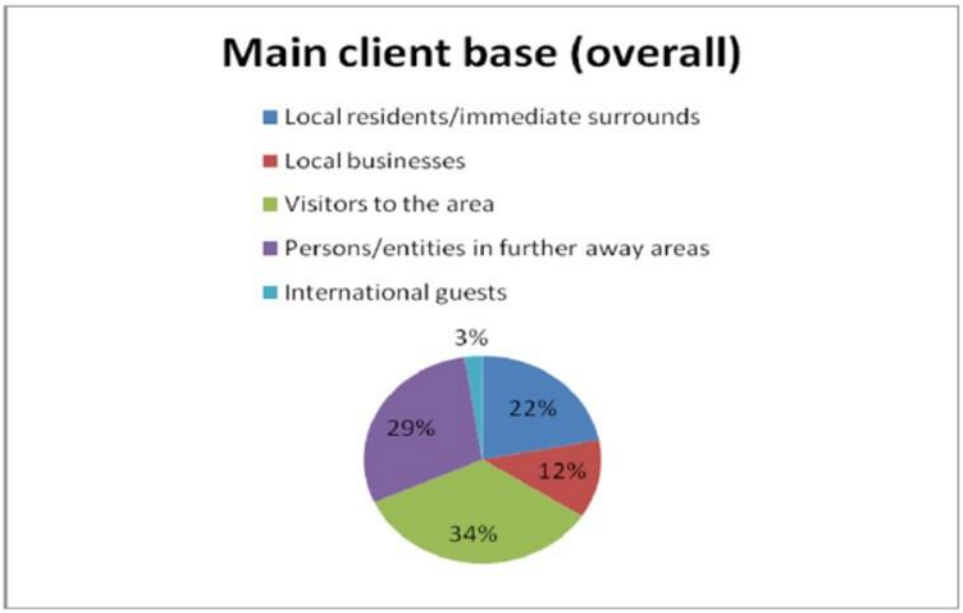

Figure 19 :Main Client base for Businesses in Magaliesburg (Magaliesburg Precinct Plan, 2011)

Regarding the sustainability of running a business in the area, it was determined that a total of 39 business have closed down in the last 5 years (Figure 20). 61% of these businesses are in the restaurant and fast-food business, which is related to the Tourism, accommodation, and outdoor activities industry.

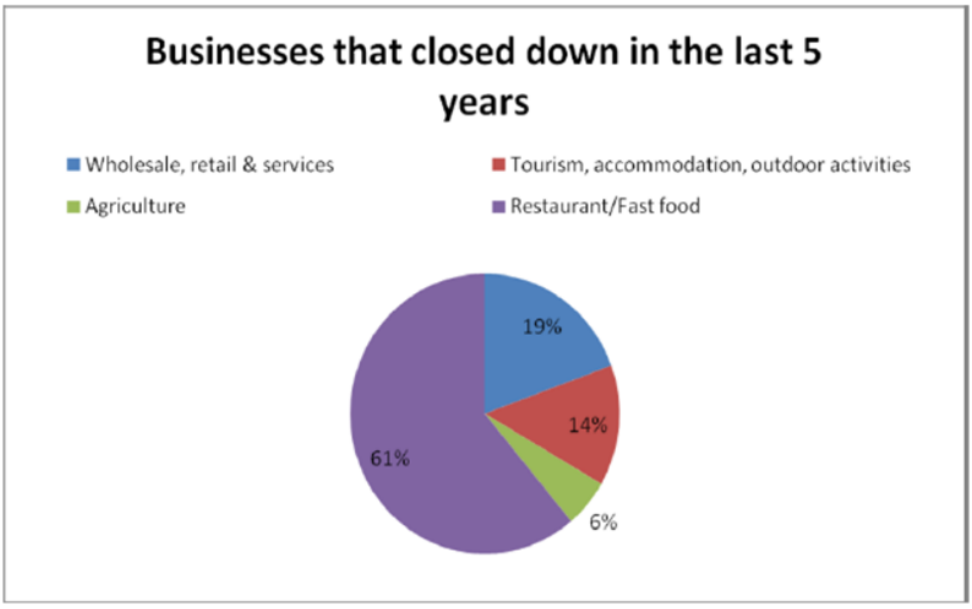

Figure 20 : Business Sustainability (Magaliesburg Precinct Plan, 2011)

With regards to employment, Figure 21, indicates the number of employees employed by those surveyed business. It can be seen that the vast majority of businesses' employees are semi-skilled, with the majority only having a primary or secondary school education.

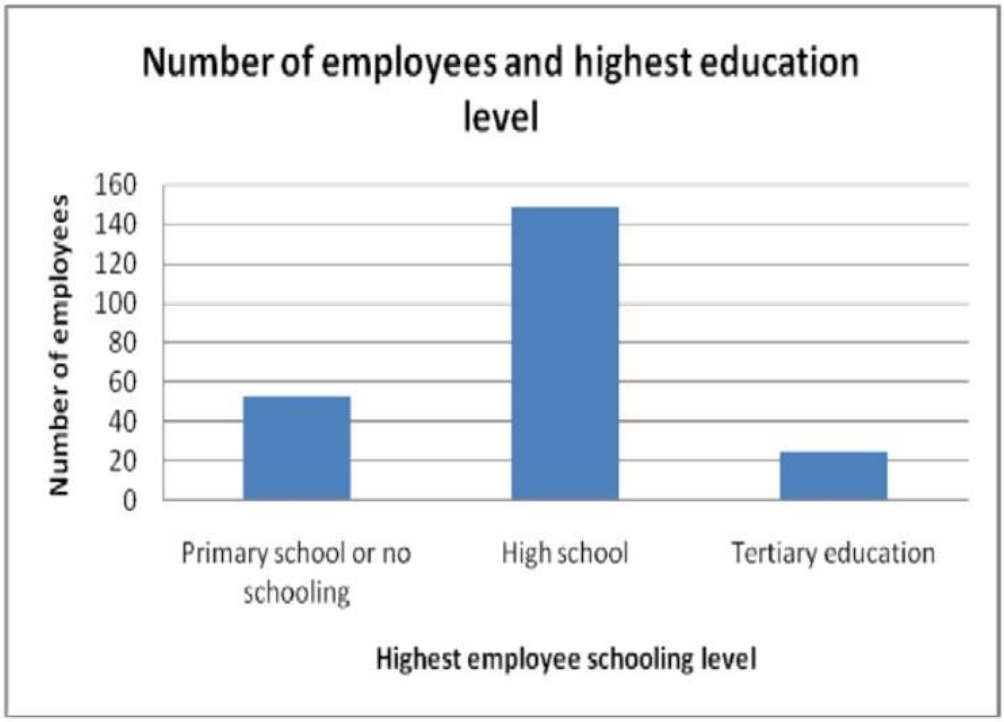

Figure 21 : Employment and Education (Magaliesburg Precinct Plan, 2011)

The broader study area is characterised by agricultural activities, interspersed by tourist accommodation facilities / conference facilities. Retail and support services concentrate in the town of Magaliesburg.

Community services such as a clinic, police station and municipal offices are also located in Magaliesburg. There are no major manufacturing or higher order services (e.g. financial services) activities in the study area.

Although transport is prominent in the study area, the area is most used as a throughroute and does not have major distribution or logistics functions. A summary per sector is contained in Table 13 (overleaf).

Employment in the Mogale City municipal area are mostly concentrated in the following sectors (see ***Figure 22***): manufacturing; community, social and personal services; financial and business services; and retail and wholesale trade.

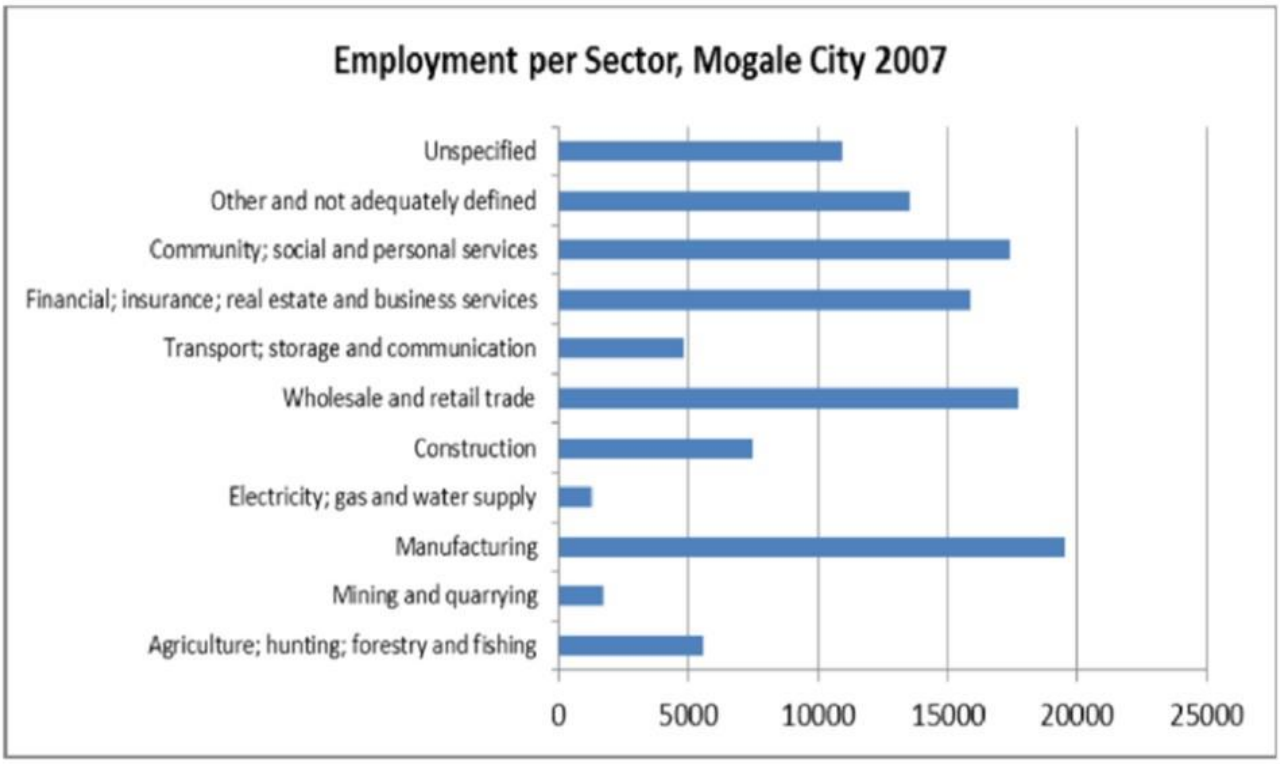

Figure 22 : Employment Per Sector (Magaliesburg Precinct Plan, 2011)

The study area however is more agricultural and rural in nature, so it can be assumed that agriculture is, and tourism related services are more prominent here than in the rest of Mogale City. None of the main employment sectors are dominant in the study area itself, as discussed in ***Table 13***.

Table 13 : Relevance of economic sectors to the study area:

Sector	Comments
Agriculture	There relatively large tracks of agricultural land in the study area and the greater region, although it could be argued that in the study area itself, agricultural potential is not fully utilised. Apart from the primary agricultural activities, there exist agro-industrial activities as a secondary sector, including agro-packaging and processing facilities.
Mining	There are isolated mining activities in the study area

Manufacturing	There are no industrial activities in the study area. However, from the surveys conducted it could be deduced that the community in the informal settlement do work in the manufacturing industry in the rest of the West Rand District. Manufacturing still remains the largest single economic activity in the West Rand. Manufacturing is the economic sector with one of the highest employments and income multiplier effects.
Building and Construction	The building and construction sector's role in the study area's economy could be of significance in the short term. This is related to the envisaged installation of services and construction of houses that are envisaged to address the informal settlements in the study area. New construction activities could take place in other areas in the vicinity, notably in the Muldersdrift area, Tarlton and Krugersdorp.
Trade, Wholesale and Accommodation	The main centres where these trade and wholesale activities are being accommodated are Magaliesburg to a limited extent, as well as Krugersdorp and Randfontein. Due to the main attraction of the Magalies River, the Magalies mountain range and the Cradle of Humankind World Heritage site, the area has developed various conference and accommodation facilities, which provide job opportunities in the hospitality industry.

Transport, Storage and Communication	The Lanseria Airport is in the vicinity of the study area and is used for export of agricultural (including horticultural) products from the larger region. A distribution facility of bottled beverages is being established in Magaliesburg.
Government Services	Government services could contribute towards the total economy of the study area.
Financing, Business and Real Estate Services	This sector is not prominent in the study area, although proposed new development may stimulate some real estate activities.

From the analysis of uses in and around the study area, it can be concluded that the economic base of the study area comprises the following economic activities:

- Agriculture (intensive, including vegetables and horticulture)
- Tourism related accommodation, facilities and activities
- Manufacturing, albeit outside the study area

Agricultural Potential

The study area has generally very high agricultural potential. It is thus very important to note that the high agricultural potential can contribute to the much-needed employment and food security in the area. There is also much land that is not used for agricultural purposes.

There are isolated areas to the south that are high to medium cultivated with isolated area to the west that are medium cultivated, with the lowest areas to the north and central areas. Most of the areas where intensive development has taken place, including the core business area in the town of Magaliesburg and Ga-Mohale are not cultivated.

Tourism

Eco-tourism is the next logical step in utilising protected areas and conservancies. Date on the extent of tourism and tourism related activities in the local economy was sourced through Tracks4Africa's maps. These maps are compiled based on GPS recordings made by tourists when travelling. It

therefore reflects all the points of interests logged by tourists as well as the routes travelled. Figure 23 shows these recorded points in the municipal area.

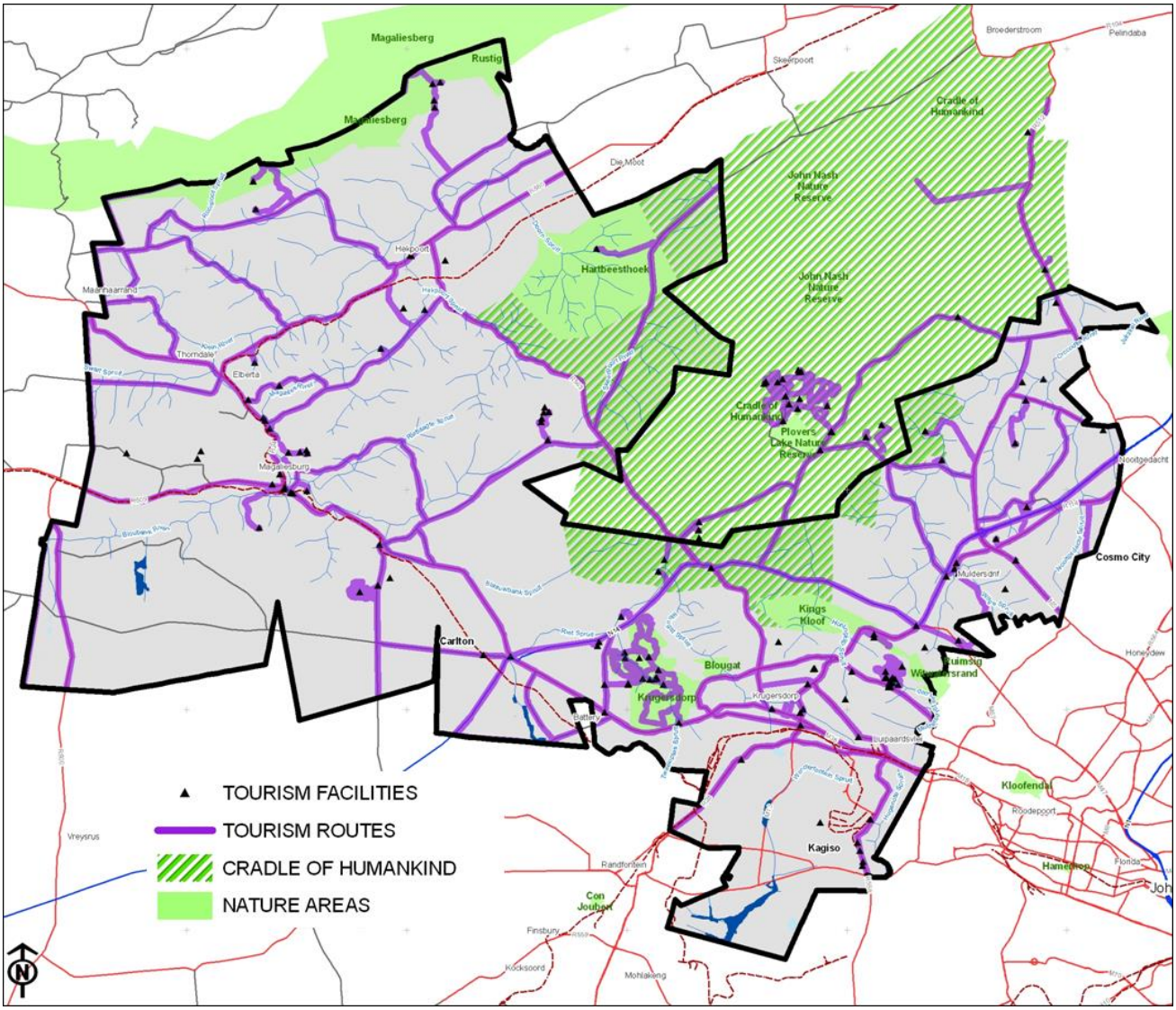

Figure 23 : Tourism Routs

Tourism activities are focussed on very specific areas and are mostly linked to outdoor adventure and recreation. Some of the most notable areas are:

- The Protea Safari 4x4 playground (Opposite the Noord Heuwel Shopping Centre).
- The Paragliding launch area off the ridge to the south of the N14 – R28 crossing.
- Krugersdorp Golf and Squash Clubs.
- The Krugersdorp Nature Reserve with the Protea Safari Eco Trail and 4x4 routes.
- The Koi Empire Fishing Area in the Muldersdrift area.
- The Rhinoceros and Lion Park in the Cradle of Humankind area.
- The whole Magaliesburg area.
- The Magalies Mountain Bike Trail (Hekpoort).

Tourism Facilities

Magaliesburg and its surrounding areas are renowned for their hospitality industry. The greater region boosts a number of these facilities which the majority located along the Magalies River and close to the Cradle of Humankind World Heritage Site.

Accommodation facilities and other tourist attractions are dispersed throughout the area. Some of these facilities are well known landmarks in their own right. However, there are no distinguishable gateways or well indicated routes giving a specific identity to the area as a whole. The establishment of the Magalies Meander goes some way in defining the area as an integrated destination, and more should be done to support this initiative.

Though Magaliesburg owes its current identity as a tourist attraction to its rich history and heritage, it falls short in displaying a distinct or memorable architectural identity.

This can be attributed to the lack of robustness in building character both in commercial and residential buildings. The town centre of Magaliesburg has lost its once held small town charm, and the design of buildings, treatment of streetscapes and land uses no longer holds much visual appeal does not display a unique, distinguishable character.

Parties to be potentially affected by the prospecting activities:

The majority of the landowners and occupiers likely to be affected by the prospecting activities will be residents on agricultural holdings on and immediately adjacent to the study area. Other industries and landowners likely to be affected include *inter alia*:

- Tourism facilities study area.

(b) Description of the current land uses

Land cover is an extension of land uses. It introduces the extent of natural phenomena such as plant cover and noticeable geological features.

Furthermore, by attaching qualitative aspects to land cover one gets an indication of areas of degradation of natural plant cover as well as the agricultural uses of land. The map shows clear distinction between commercial farming areas, conservation, and settlement activities. Broad land use patterns are clearly defined and show a natural development path that should be recognised in planning.

Secondly, the entrenched nature of the development and the association of development patterns with natural phenomena might indicate that a natural optimization process has developed over time. One should question the ability to radically change these patterns or to steer development in a different direction.

The extent to which the natural features have impact on the human spatial footprint is noticeable. The mixed nature of the Muldersdrift area is important as is the strong constraints mining places on the integration of the southernmost areas of the municipality with the growth pressures below the escarpment along the R28 and N14.

The residential buildings within and around Magaliesburg town centre and Ga-Mohale are predominantly occupied by low-income households. Residential buildings within the town are typically single storey red brick or plastered buildings of early 1930s architecture, built with the development of the railway system. They have saddle roofs of s-profile corrugated sheeting with gables and verandas that stretch in front of the buildings facing the street. In majority, these houses are dilapidated and sub-leased by, on average, two low-income households per unit.

Residential buildings within and around the Ga-Mohale settlement are typical of low-cost housing design in South Africa for low-income households. They are designed to be small (35sqm/unit).

They lack robustness in terms of flexibility as they do not promote sustainable communities. They are designed to be inflexible to change hence they do not promote alterations and additions that would create opportunities for these households to better themselves financially or extend should their financial condition improve.

The distance of Ga-Mohale from the main town provides the opportunity for small retail and rental businesses that allow these household to generate additional incomes. To capitalise on these opportunities, the residents have used informal structures built of corrugated iron sheeting and containers as additions to the initial brick units from which these small informal businesses are run, essentially turning these residential units into live-work units.

(c) Description of specific environmental features and infrastructure on the site

Environmental Features

The major sensitive features within the study area include:

- Houses and residents on the small holdings.
- Potential heritage objects or buildings.
- Sensitive Flora and fauna areas and ridge ecosystem.
- Surface water features.

Infrastructure on the study area and in close proximity

Engineering Services

Adequate and reliable engineering infrastructure plays an important role in the facilitation of development and ensuring that basic needs are met, also in the context of rural development in South Africa. Access to bulk infrastructure, such as water, electricity, sanitation and roads, determines the location, direction and intensity of development. Infrastructure is used as one of the important criteria to evaluate the possibility and readiness of a particular proposed development area.

Any proposed land development area should not be addressed in isolation with regards to infrastructure but should be addressed in the broader developmental context. The limited availability of engineering services in the Magaliesburg area will have dire consequences in the short to medium term, and new development will depend on when major engineering infrastructure investment take place in this area.

i) Water

Water provision in the study area is via a 200mm Rand Water pipeline, feeding into the Magalisburg Reservoir (current 1Ml capacity) on the south-western side of the study area No water treatment facility exits in the area. The capacity of the reservoir is not sufficient to cater for all new proposed development in the area.

ii) Sewer

The minimum acceptable basic level of sanitation is set out in the Water Services Act of 1998. This Act inter alia directs that each household should have a basic sanitation facility that adheres and promotes the appropriate health and hygiene behaviours. The area is served by a treatment plant, but due to the rural nature of the Magaliesburg area, some sanitation consists of on-site treatment, ranging from package plants to conservancy tanks. Considering the pollution threats associated with the package plants, the conservancy sewer tank system is the preferred option from an environmental point of view.

The sewer gravitational facility in the study area links to the Magaliesburg Wastewater Treatment Works is located on the north. The sewer treatment works has reached capacity and any additional development will need additional capacity or a new treatment work will have to be built. It drains into the Magalies River (Crocodile River) at a rate of 330 kl/d (Infrastructure Master Plan 2009). It has been set as a strategic goal to increase the capacity of the treatment works by 6Ml and improve inlet works and construct a balancing dam, as well as to ensure compliance with effluent discharge standards (Infrastructure Master Plan 2009).

iii) Electricity

The supply authority in the Magaliesburg area is Eskom. Mogale City is responsible to supply public lighting. There are no high voltage stations in the study area and a number of medium voltage stations throughout the study area.

iv) Solid Waste

Formal refuse removal occurs in the core business area of Magaliesburg and in Ga-Mohale township. The informal settlements do receive refuse removal through skips that are collected or cleaned every week. The formal rural areas use private solid waste methods. However, due to the fact that there are no proper waste management policies in Mogale City, improper practices occur. These practices result in the pollution of underground freshwater systems and subsequently disrupt the ecosystems and eventually affect people’s lives. There is no recorded recycling or composting areas. The landfill site in Ga-Mohale is the only one in the study area.

Roads

At a regional scale, the most prominent movement lines are the R24 providing north south linkage, and the R509 providing east-west linkage.

The core business area of Magaliesburg is accessible from the R24 that leads in traffic from the following areas: Tarlton, Krugersdorp and Randfontein southwards and Rustenburg northwards, as well as the R509 that leads in traffic from Derby and Koster from the west.

Internally, the current settlement pattern hampers movement and accessibility between the retail uses and government services located mostly in the old town centre of Magaliesburg, and the majority of local residents who are located in the Ga-Mohale settlement with the main access road more than (x) km from the town centre.

The internal road network is not well defined with the majority of the roads in the rural areas being gravel roads. It is characterized by right of way (RoW) servitudes giving access to the individual properties. Ga-Mohale township's roads network is defined by the layout plan of the township. It is also noted that there are very limited linkages with the rest of the area due to water courses and sensitive areas. The Magaliesburg area is traversed by water courses making the area prone to high runoff. During rainy seasons the surface water causes a substantial volume of grit on the gravel roads that will quickly silt up and reduce the efficiency of runoff courses and stormwater drains.

Environmental and current land use map

(Show all environmental, and current land use features)

Refer to Figure 24 - Figure 26

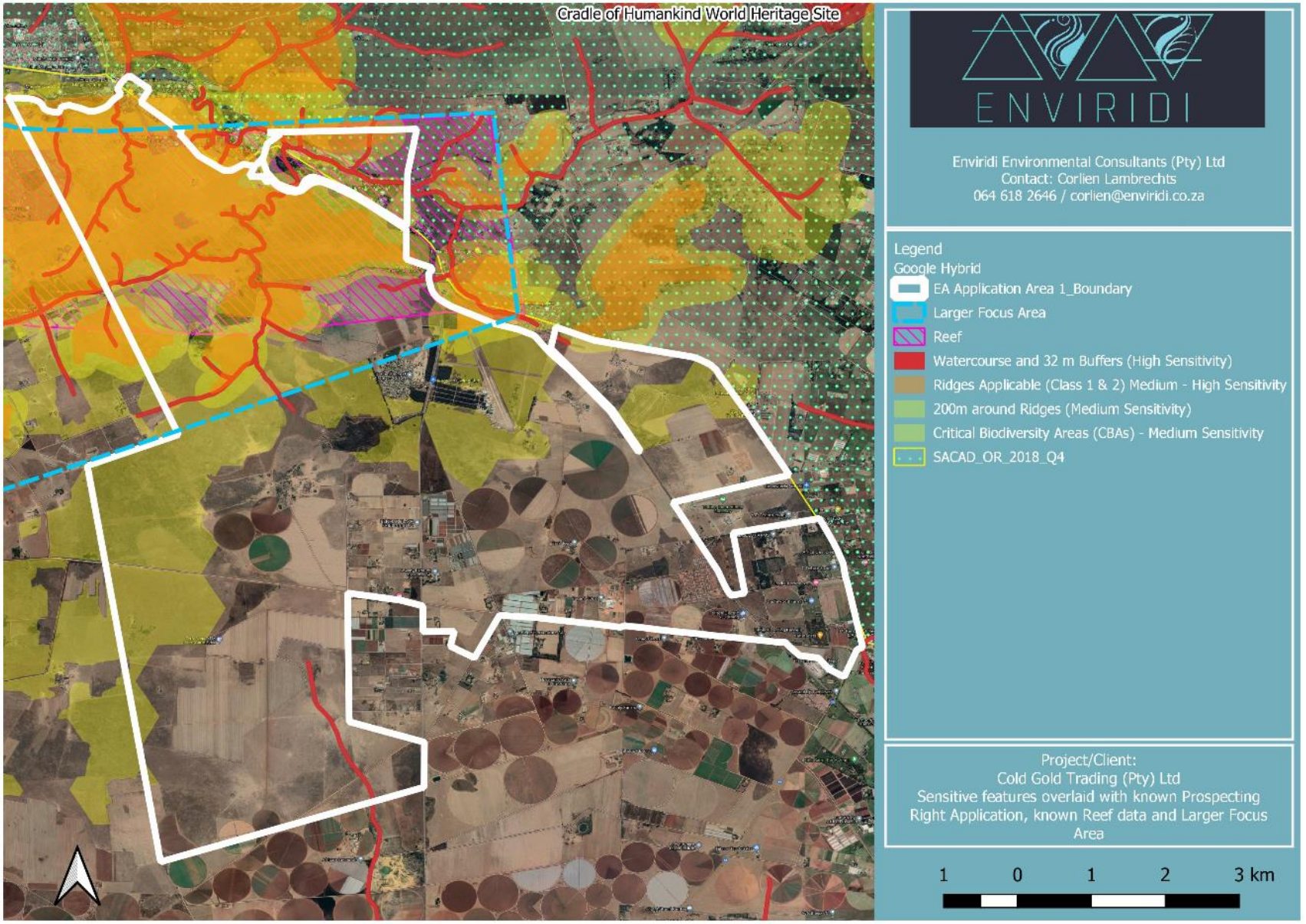

Figure 24: Sensitivity Maps of the Study Area - Ecological

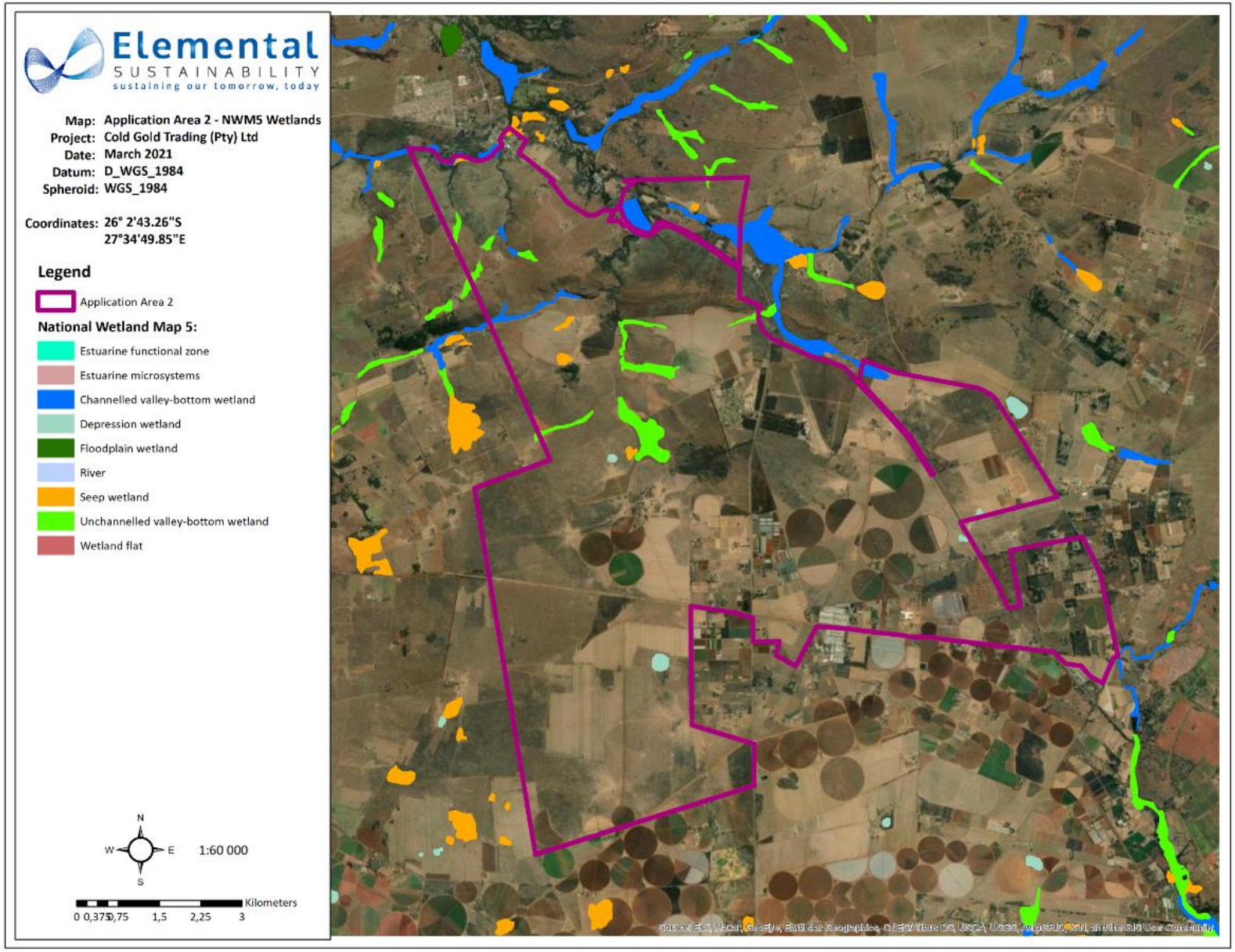

Figure 25: Sensitivity Maps of the Study Area - Wetlands

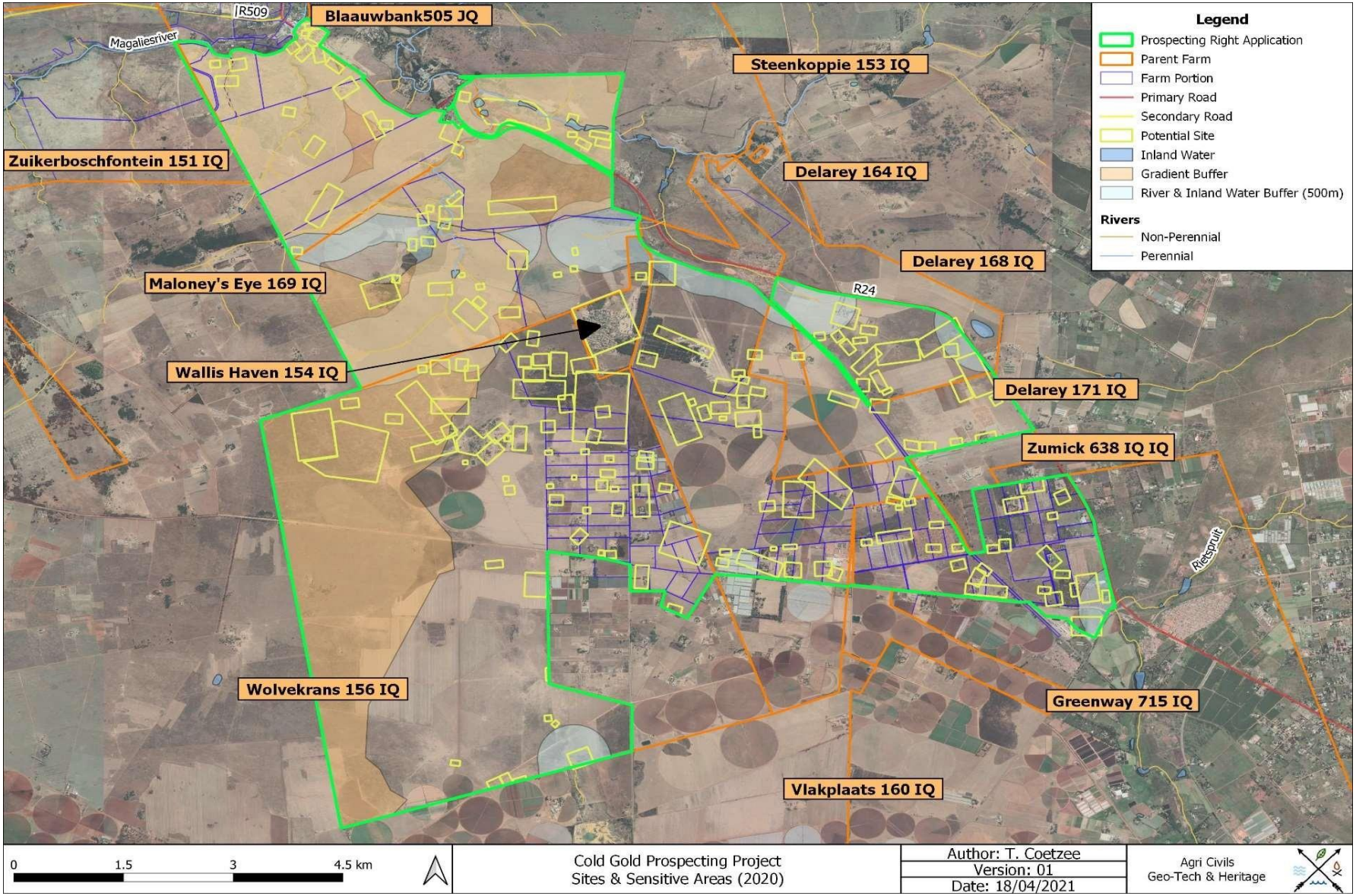

Figure 26: Sensitivity Maps of the Study Area - Heritage

9. Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

Table 14: Impact Significance Calculation – Construction, Operational and Rehabilitation Phase

ENVIRONMENTAL ASPECT	NATURE OF THE IMPACT	PHASE	IMPACT STATUS	MAGNITUDE	EXTENT	DURATION	REVERSIBILITY	IRREPLACEABILITY	PROBABILITY	SIGNIFICANCE PRE-MITIGATION	MITIGATION POTENTIAL	SIGNIFICANCE POST-MITIGATION	CONFIDENCE RATING	CUMULATIVE IMPACTS
GEOLOGY AND SOILS	Minor loss and disturbance to topsoil as a result of clearing of vegetation for drilling. When vegetation is cleared and the topsoil is stripped, the soil's natural structure is disturbed and as a result the natural cycle is broken exposing the bare soil to erosion. Vehicles driving on these soils causes compaction of soils and reduces the soil's ability to be penetrated by root growth. Compaction also increases erosion potential. When soils are not stripped and stockpiled according to the soil stripping guidelines these soils would have lost their natural physical and chemical properties, reducing the topsoil's ability to be a plant growth medium. The above factors all contribute to a loss of the topsoil's ability to be a resource through alterations and removal.	Construction and Operation	–	3	2	1	2	8	5	40	Medium	24	Certain	Very Low
	Hydrocarbon spills on soils can occur where heavy machinery and vehicles are parked such as the hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is always a chance of these breaking down and/or leaking.	Construction and Operation	–	3	2	1	3	9	2	18	High	3.6	Sure	Very Low
HYDROLOGY GROUNDWATER SURFACE WATER	Stormwater, erosion and siltation impacts due to a lack of implementing temporary measures to manage stormwater run-off quantity and quality.	Construction and Operation	–	3	3	1	3	10	3	30	Medium	18	Sure	Very Low
	Contamination of stormwater runoff and ground water, caused by chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from heavy vehicles and machinery.	Construction and Operation	–	3	2	1	3	9	2	18	Very Low	9	Sure	Very Low

ENVIRONMENTAL ASPECT	NATURE OF THE IMPACT	PHASE	IMPACT STATUS	MAGNITUDE	EXTENT	DURATION	REVERSIBILITY	IRREPLACEABILITY	PROBABILITY	SIGNIFICANCE PRE-MITIGATION	MITIGATION POTENTIAL	SIGNIFICANCE POST-MITIGATION	CONFIDENCE RATING	CUMULATIVE IMPACTS
	Los and degradation of wetland areas as a result of prospecting activities.	Construction and Operation	_	3	3	1	3	10	4	40	High	8	Sure	Very Low
BIODIVERSITY	The site has sections which ranges between transformed, slightly impacted to natural, however, the onset of prospecting activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact vegetation and on the animals that use the area as habitat. All ridge and sensitive features shown in Figure 6 and Figure 20 should be avoided where possible as impacts will be more severe within these areas. Construction (or additional construction activities) will result in increase of potentially destructive movement within the compromised area.	Construction	_	3	2	1	2	8	5	40	Medium	24	Certain	Low
	If ridges cannot be avoided, impacts will occur and could possibly damage the integrity of the areas by the movement of the machinery and fragmentation caused by large machinery trying to get access to the areas if it is located within the ridge or rocky outcrop areas. The activity will be short term, temporary and local, which	Construction and Operation	_	**3**	**3**	**1**	**3**	**10**	**4**	40	Medium	24	**Sure**	**Low**

ENVIRONMENTAL ASPECT	NATURE OF THE IMPACT	PHASE	IMPACT STATUS	MAGNITUDE	EXTENT	DURATION	REVERSIBILITY	IRREPLACEABILITY	PROBABILITY	SIGNIFICANCE PRE-MITIGATION	MITIGATION POTENTIAL	SIGNIFICANCE POST-MITIGATION	CONFIDENCE RATING	CUMULATIVE IMPACTS
	reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. As noted, it is recommended that all ridge and sensitive features shown in Figure 6 and Figure 15 should be avoided where possible as impacts will be more severe within these areas.													
	Development related activities may lead to the loss of floral species of conservation concern. Ridges and conservation worthy areas should be avoided and includes Class 1 & Class 2 ridges found on the property, rocky outcrops, the Bloubank River and various of its tributaries as well as tributaries of the Magalies River. This will limit impacts on the natural biodiversity and prevent disturbance of these unique features present. The SCC Pearsonia bracteata is classified as Near Threatened (NT) in terms of the SANBI Red List and is considered to have a low likelihood of occurrence on the project area. Two (2) species protected in terms of the TNCA were identified to occur on the project area during the site visit, namely Cussonia paniculata (Highveld cabbage tree) and Protea roupelliae (Silver sugar bush). The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts.	Construction and Operation	–	**3**	**3**	**1**	**3**	**10**	**4**	40	Medium	24	**Sure**	**Low**
	Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may	Construction and Operation	–	**3**	**3**	**1**	**3**	**10**	**4**	40	Medium	24	**Sure**	**Low**

ENVIRONMENTAL ASPECT	NATURE OF THE IMPACT	PHASE	IMPACT STATUS	MAGNITUDE	EXTENT	DURATION	REVERSIBILITY	IRREPLACEABILITY	PROBABILITY	SIGNIFICANCE PRE-MITIGATION	MITIGATION POTENTIAL	SIGNIFICANCE POST-MITIGATION	CONFIDENCE RATING	CUMULATIVE IMPACTS
	also result in the spread of the invaders already found on-site to other surrounding areas.													
	Impacts on the water resources (and potential wetlands) located within and around the area designated for development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly leak from the vehicles and machines used to conduct the drilling.	Construction and Operation	–	3	3	1	3	10	3	30	Medium	18	Sure	Low
	The results may be positive if rehabilitation has been done correctly and the site may be rehabilitated back to a natural landscape. Initial movement around the site to ensure rehabilitation will have similar results as may be expected during the Construction Phase.	Construction and Operation	–	3	3	1	3	10	3	30	Medium	18	Sure	Low
ARCHAEOLOGICAL/ HERITAGE RESOURCES	Alteration of archaeological, historical and palaeontological resources that may be discovered during drilling.	Construction and Operation	–	2	1	5	5	13	2	26	Medium	15.6	Sure	Very Low
VISUAL AND SENSE OF PLACE	Visibility from sensitive receptors / visual scarring of the landscape as a result of the prospecting activities.	Construction and Operation	–	3	3	1	1	8	5	40	Low	32	Sure	Very Low
NOISE AND VIBRATION	Nuisance and health risks caused by an increase in the ambient noise level as a result of noise and vibration impacts associated with the operation of vehicles, machinery and equipment.	Construction and Operation	–	4	3	1	2	10	5	50	Medium	30	Sure	Very Low
AIR QUALITY	Increased dust pollution due to vegetation clearance and vehicles driving on gravel roads and drilling.	Construction and Operation	–	4	3	1	2	10	5	50	Medium	30	Sure	Very Low
	Gaseous emissions from vehicles and machinery may cause an impact on ambient air quality.	Construction and Operation	–	3	3	1	3	10	5	50	Low	40	Sure	Very Low

ENVIRONMENTAL ASPECT	NATURE OF THE IMPACT	PHASE	IMPACT STATUS	MAGNITUDE	EXTENT	DURATION	REVERSIBILITY	IRREPLACEABILITY	PROBABILITY	SIGNIFICANCE PRE-MITIGATION	MITIGATION POTENTIAL	SIGNIFICANCE POST-MITIGATION	CONFIDENCE RATING	CUMULATIVE IMPACTS
WASTE	Generation of additional general waste, litter and building rubble and hazardous waste from drilling opperation.	Construction and Operation	–	3	3	1	5	12	5	60	Medium	36	Certain	Very Low
SERVICES	Minor impact caused by need for services i.e., water, electricity and sewerage systems during the prospecting phase causing additional strain on natural resources and service infrastructure.	Construction and Operation	–	2	2	1	3	8	5	40	Medium	24	Certain	Very Low
TRAFFIC	Minor change in traffic patterns as a result of traffic entering and exiting the site on the surrounding road infrastructure and existing traffic.	Construction and Operation	–	2	3	1	1	7	5	35	Medium-High	14	Sure	Very Low
	Nuisance, health and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.	Construction and Operation	–	5	3	5	5	18	3	54	Medium	32.4	Sure	Very Low
HEALTH AND SAFETY	Possibility of prospecting activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.	Construction and Operation	–	5	4	5	5	19	3	57	Medium - High	22.8	Sure	Very Low
SOCIO-ECONOMIC	Potential creation of very limited extent short term employment opportunities for the local community, during the prospecting phase.	Construction and Operation	+	3	3	1	1	8	5	40	N/A	40	Certain	Very Low
	Multiplier effects on local economy will be positive, but very limited in extent and only short term.	Construction and Operation	+	2	3	1	1	7	5	35	N/A	35	Certain	Very Low
TOURISM	The posable impact on the visual aspect, senses of place and the noise and dust could have an impact on tourism facilities in close vicinity to the prospecting, but the non-invasive nature of the activity and short timeframe of the activity would likely lead to a non-significant impact.	Construction and Operation	–	2	3	1	1	7	5	35	Medium High	14	Sure	Very Low

10. Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks.

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

A “significant impact” is defined as it is defined in the EIA Regulations (2014) (as amended): “an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence”. The objective of this EIA methodology is to serve as framework for accurately evaluating impacts associated with current or proposed activities in the biophysical, social and socio-economical spheres. It aims to ensure that all legal requirements and environmental considerations are met in order to have a complete and integrated environmental framework for impact evaluations.

The process of determining impacts to be assessed is one of the most important parts of the environmental impact assessment process. It is of such high importance because the environmental impacts identified can and are often linked to the same impact stream. In this method all impacts on the biophysical environment are assessed in terms of the overall integrity of ecosystems, habitats, populations and individuals affected. For example, the removal of groundcover for the sloping or scraping of an embankment, can lead to higher amounts of water runoff which increases the rate of erosion. Further down in the river the amount of sediment increases because of the increased erosion. A number of fish species cannot endure the high amount of sediment and moves off. The habitat is thus changed or in the process of changing. Thus, one needs to understand that the root of the problem (removal of groundcover) is assessed in terms of the degree of change in the health of the environment and/or components in relation to their conservation value. Thus, if the impact of removal of groundcover of a definable system is high and the conservation value is also high then the impact of removal of groundcover is highly significant.

Environmental Impact Assessment (EIA) Regulations, 2014 requirements (as amended)

The Environmental Impact Assessment (EIA) 2014 Regulations promulgated in terms of Sections 24 (5), 24M and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended] (NEMA), requires that all identified potential impacts associated with the proposed project be assessed in terms of their overall potential significance on the natural, social and economic environments. The criteria identified in the EIA Regulations (2014) include the following:

- Nature of the impact.
- Extent of the impact.
- Duration of the impact
- Probability of the impact occurring.
- Degree to which impact can be reversed.
- Degree to which impact may cause irreplaceable loss of resources.
- Degree to which the impact can be mitigated; and
- Cumulative impacts.

ELEMENTAL SUSTAINABILITY has developed an impact assessment methodology (as defined below) whereby the Significance of a potential impact is determined through the assessment of the relevant temporal and spatial scales determined of the Extent, Magnitude and Duration criteria associated with a particular impact. This method does not explicitly define each of the criteria but rather combines them and results in an indication of the overall significance.

ELEMENTAL SUSTAINABILITY Impact Assessment Methodology

By considering the root cause of the issue in this way, the probability that the activity undertaken does or may result in an impact, can be determined. The associated impact can then be assessed in order to determine its significance and to define mitigation measures or management measures to address the impact.

The following definitions therefore apply:

- An activity is a distinct process or task undertaken by an organisation for which a responsibility can be assigned. Activities also include facilities or pieces of infrastructure that are possessed by an organisation.
- An environmental aspect is an ‘element of an organisation’s activities, products and services which can interact with the environment. The interaction of an aspect with the environment may result in an impact.
- Environmental impacts are the consequences of these aspects on environmental resources or receptors of particular value or sensitivity, for example, disturbance due to noise and health effects due to poorer air quality.
- Receptors can comprise, but are not limited to, people or human-made systems, such as local residents, communities and social infrastructure, as well as components of the biophysical environment such as aquifers, flora and palaeontology. Impacts on the environment can lead to changes in existing conditions; the impacts can be direct, indirect or cumulative.

- Direct impacts refer to changes in environmental components that result from direct cause-effect consequences of interactions between the environment and project activities. Indirect impacts result from cause-effect consequences of interactions between the environment and direct impacts; and
- Cumulative impacts refer to the accumulation of changes to the environment caused by human activities.

Assessment of Impact Significance

The accumulated knowledge and the findings of the environmental investigations form the basis for the prediction of impacts. Once a potential impact has been determined, it is necessary to identify which project activity will cause the impact, the probability of occurrence of the impact, and its magnitude and extent (spatial and temporal). This information is important for evaluating the significance of the impact, and for defining mitigation and monitoring strategies. The impact assessment methodology used to determine the significance of impacts prior and after mitigation is presented below.

Extent of the impact

The EXTENT of an impact is the physical extent/area of impact or influence.

Score	Extent	Description
1	Footprint	The impacted area extends only as far as the actual footprint of the activity.
2	Site	The impact will affect the entire or substantial portion of the site/property.
3	Local	The impact could affect the area including neighbouring properties and transport routes.
4	Region	Impact could be widespread with regional implication.
5	National	Impact could have a widespread national level implication.

Duration of the impact

The DURATION of an impact is the expected period of time the impact will have an effect.

Score	Duration	Description
1	Short term	The impact is quickly reversible within a period of less than 2 years, or limited t the construction phase, or immediate upon the commencement of floods.
2	Short to medium term	The impact will have a short term lifespan (2–5 years).
3	Medium term	The impact will have a medium term lifespan (6 – 10 years)
4	Long term	The impact will have a medium term lifespan (10 – 25 years)
5	Permanent	The impact will be permanent beyond the lifespan of the development

Intensity of the impact

The INTENSITY of an impact is the expected amplitude of the impact.

Score	Intensity	Description
1	Minor	The activity will only have a minor impact on the affected environment in such a way that the natural processes or functions are not affected.
2	Low	The activity will have a low impact on the affected environment.
3	Medium	The activity will have a medium impact on the affected environment, but function and process continue, albeit in a modified way.
4	High	The activity will have a high impact on the affected environment which may be disturbed to the extent where it temporarily or permanently ceases.
5	Very High	The activity will have a very high impact on the affected environment which may be disturbed to the extent where it temporarily or permanently ceases.

Reversibility of the impact

The REVERSIBILITY of an impact is the severity of the impact on the ecosystem structure

Score	Reversibility	Description
1	Completely reversible	The impact is reversible without any mitigation measures and management measures
2	Nearly completely reversible	The impact is reversible without any significant mitigation and management measures. Some time and resources required.
3	Partly reversible	The impact is only reversible with the implantation of mitigation and managemer measures. Substantial time and resources required.
4	Nearly irreversible	The impact is can only marginally be reversed with the implantation of significan mitigation and management measures. Significant time and resources required t ensure impact is on a controllable level.
5	Irreversible	The impact is irreversible.

Probability of the impact

The PROBABILITY of an impact is the severity of the impact on the ecosystem structure

Score	Probability	Description
1	Improbable	The possibility of the impact occurring is highly improbable (less than 5% of impact occurring).
2	Low	The possibility of the impact occurring is very low, due either to the circumstances, design or experience (5% to 30% of impact occurring).
3	Medium	There is a possibility that the impact will occur to the extent that provision must be made therefore (30% to 60% of impact occurring).
4	High	There is a high possibility that the impact will occur to the extent that provision must be made therefore (60% to 90% of impact occurring).

5	Definite	The impact will definitely take place regardless of any prevention plans, and there can only be relied on migratory actions or contingency plans to contain the effect (90% to 100% of impact occurring).

Calculation of Impacts – Significance Rating of Impact

Significance is determined through a synthesis of the various impact characteristics and represents the combined effect of the Irreplaceability (Magnitude, Extent, Duration, and Intensity) multiplied by the Probability of the impact. The significance of an impact is rated according the scores a presented below:

Equation 1:

Significance = Irreplaceability (Reversibility + Intensity + Duration + Extent) X Probability

Significance Rating

Score	Significance	Colour Code
1 to 20	Very low	
21 to 40	Low	
41 to 60	Medium	
61 to 80	High	
81 to 100	Very high	

Mitigation Efficiency

Degree to which the impact can be mitigated: *The effect of mitigation measures on the impact and its degree of effectiveness:*

Equation 2:

Significance Rating = Significance x Mitigation Efficiency

High	0,2
Medium to High	0,4
Medium	0,6
Low to Medium	0,8
Low	1,0

Confidence rating: *Level of certainty of the impact occurring*.

- **Certain**
- **Sure**
- **Unsure**

Cumulative impacts: *The effect the combination of past, present and "reasonably foreseeable" future actions have on aspects.*

- Very Low cumulative impact

- Low cumulative impact
- Medium cumulative impact
- High cumulative impact

The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties).

This section will be completed once comments have been received from interested and affected parties.

The possible mitigation measures that could be applied and the level of risk.

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

This section will be completed once comments have been received from interested and affected parties.

Motivation where no alternative sites were considered

Prospecting is conducted in phases, where the activities and location of drilling to sample soil is dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot be predetermined. The overall prospecting area is indicated in Figure 1. Areas to be avoided in terms of sensitivities are also indicated on the sensitivity maps in this report. Positioning of invasive prospecting planned in the sensitive areas and buffer zones should be conducted with a suitably qualified ecologist in order to avoid or minimise the destruction of any sensitive vegetation or habitats occurring in these areas.

The site is; therefore, the preferred site and alternative sites are not considered.

- **Statement motivating the alternative development location within the overall site**

(Provide a statement motivating the final site layout that is proposed)

The specific locations of intrusive drilling activities will be determined during Phase 1 of the Prospecting Works Programme. All infrastructure to be developed will be mobile and temporary. The

specialist, however, did recommend that no prospecting be conducted on the sensitive areas as identified in the Biodiversity, Wetland and Heritage Studies.

b) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity

(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures).

- **Approach to the EIA**

An Environmental Impact Assessment (EIA) is a good planning tool. It identifies the environmental impacts of a proposed development and assists in ensuring that a project will be environmentally acceptable and integrated into the surrounding environment in a sustainable way.

The Basic Impact Assessment for this project complies with the National Environmental Management Act (1998) (as amended) and the NEMA EIA Regulations (2014) and guidelines of the Department of Environmental Affairs (DEA). The guiding principles of an EIA are listed below.

- **Guiding principles for an EIA**

The EIA must take an open participatory approach throughout. This means that there should be no hidden agendas, no restrictions on the information collected during the process and an open-door policy by the proponent. Technical information must be communicated to stakeholders in a way that is understood by them and that enables them to meaningfully comment on the project.

There should be ongoing consultation with interested and affected parties representing all walks of life. Sufficient time for comment must be allowed. The opportunity for comment should be announced on an on-going basis. There should be opportunities for input by specialists and members of the public. Their contributions and issues should be considered when technical specialist studies are conducted and when decisions are made.

- **Information gathering**

Early in the Basic Assessment process, the Environmental Assessment Practitioner (EAP) identified the information that would be required for the impact assessment and the relevant data were obtained. In addition, available information about the receiving environment was gathered from reliable sources,

interested and affected parties, previous documented studies in the area and previous EIA Reports. The project team visited the site to gain first-hand information and an understanding of the existing operations and the proposed project.

- **Specialist Assessments**

The following specialist studies have been conducted:

- Wetland Assessment.
- Ecological and Biodiversity Scan;
- Cultural heritage desktop assessment.
- Closure Cost Assessment

The main objective of the specialist studies is to provide independent scientifically sound information on issues of concern relating to the project proposal.

The findings and recommendations identified by the various specialist studies undertaken, were incorporated into the Basic Impact Assessment.

- **Legislative Framework**

The legal requirements were described and assessed in detail.

- **Alternatives**

Various site alternatives and layouts have been assessed to determine the best socio-economical and biophysical option.

- **Description and assessment of impacts identified**

A comprehensive list of all potential impacts of the prospecting as identified by the EAP and the specialists, are provided and are assessed.

- **Environmental management programme**

An Environmental Management Programme containing mitigation, management and monitoring measures and specifying roles and responsibilities was compiled with specialist input and are included in this report.

- **Stakeholder engagement**

Registered interested and affected parties including relevant organs of state, are consulted with during

the process. All their comments will be formally responded to and incorporated into the Basic Assessment Report and Environmental Management Programme that will be submitted to the competent authority.

c) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties)

Potential impacts that may be caused by the proposed development will be identified using input from the following:

- Views of I&APs.
- Existing information.
- Specialist investigations.
- Site visit with the project team; and
- Legislation.

The following potential major direct, indirect and cumulative impacts were identified:

- Contamination and compaction of soils.
- Erosion.
- Contamination of ground- and surface water quality and decline in quantity.
- Impacts on biodiversity.
- Loss and displacement of fauna.
- Impacts on existing land use of the study and surrounding area.
- Destruction or loss of heritage features including graves and other historical sites of importance that may be uncovered during excavations.
- Decreased aesthetic value and impact on “Sense of Place”.
- Poor air quality and decreased visibility due to dust pollution.
- Increased noise levels.
- Waste generation.
- Increased demand on service infrastructure and resources.
- Slight increase in traffic and need for maintenance of road infrastructure.
- Potential injury and loss of health and life of humans; and
- Altered Socio-Economic Environment (Positive or negative).

Table 15: Assessment of each identified potentially significant impact and risk

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
• Clearing of vegetation and topsoil on borehole site • Prospecting including diamond core drilling, logging and sampling of the borehole core. • Dust Suppression. • Refilling drilled holes	Minor loss and disturbance to topsoil as a result of clearing of vegetation for drilling. When vegetation is cleared and the topsoil is stripped, the soil's natural structure is disturbed and as a result the natural cycle is broken exposing the bare soil to erosion. Vehicles driving on these soils causes compaction of soils and reduces the soil's ability to be penetrated by root growth. Compaction also increases erosion potential. When soils are not stripped and stockpiled according to the soil stripping guidelines these soils would have lost their natural physical and chemical properties, reducing the topsoil's ability to be a plant growth medium. The above factors all contribute to a loss of the topsoil's ability to be a resource through alterations and removal.	Soil	Construction and Operation	**Low (-)**	**Prevent and reduce through management measures.** • Demarcation of prospecting areas: • Areas to be prospected must be clearly demarcated. • Sensitive areas to be avoided as prescribed by specialist studies must be avoided and prospecting may not take place in these demarcated sensitive areas. • A final prospecting plan must be compiled clearly showing areas to be drilled and no-go areas. The plan must be approved by all specialists. • A final prospecting plan will be compiled and provided to all registered I&AP's 30 days before the commencement of the physical prospecting activities. **Stripping of topsoil:** • Clearing of areas to take place a maximum of one month prior to intended prospecting in the area. • Stripping of topsoil will not take place during rain or excessive wind; and • The top 30 cm of vegetation and topsoil is to be stripped from the area to be prospected. **Storage of topsoil / overburden:** • Topsoil (top 30cm) is to be stored in predetermined topsoil berms, (+/- 5m) outside the boundary of the specific area; and • Topsoil stockpiles will be restricted to 1.5 to 2m in height.	**Very Low (-)**
	Hydrocarbon spills on soil can occur where heavy machinery and vehicles are parked such as the hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is	Soil	Construction and Operation	**Very Low (-)**	**Prevent and reduce and remedy through management measures.** • All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks.	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	always a chance of these breaking down and/or leaking.				• All leaks will be cleaned up immediately using an absorbent material and spill kits, in the prescribed manner; and • The approved Integrated Water and Waste Management Plan to be implemented. ***Hydrocarbons and hazardous waste*** • All hazardous waste generated shall be kept separate and shall not be mixed with general waste; and • All hazardous waste shall be stored within a sealed drum on an impermeable surfaced area within the central waste storage and transition area.	
	Stormwater, erosion and siltation impacts due to a lack of implementing temporary measures to manage stormwater run-off quantity and quality.	Surface water	Construction and Operation	**Very Low (-)**	**Prevent and reduce and remedy through management measures.** • A generic Stormwater Management Plan (SMP) to be developed for the collective area where prospecting will occur, (or the existing SMP updated, where applicable for present and future activities) and should include the management of stormwater during drilling, as well as the installation of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area. • Temporary stormwater management systems (such as sandbags) will be installed to prevent stormwater from entering or exiting the area where prospecting will occur, which could result in silt laden surface water from draining into natural drainage lines • The slopes of the area where prospecting activities will occur, should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scrub (hydrologic action by water that causes erosion). A maximum gradient of 1:3 is recommended. • If necessary, temporary diversion channels should be constructed ahead of the stockpiles (if relevant) to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream (down gradient) of the prospecting area.	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					• Existing vegetation must be retained as far as possible to minimise erosion problems. • Rehabilitation of the prospecting area shall be planned and completed (after conclusion of the prospecting activities) in such a way that the run-off water (if any) will not cause erosion. • Visual inspections shall be done on a weekly basis with regard to the stability of the temporary water control structures, erosion and siltation (if required). • Sediment-laden run-off from cleared areas should be prevented from entering rivers and streams. • No river or surface water may be affected by silt emanating from the prospecting area • No wastewater may run freely into any of the surrounding naturally vegetated areas.	
	Contamination of stormwater runoff and ground water, caused by chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from heavy vehicles and machinery and fuel storage area.	Surface water and ground water resources	Construction and Operation	**Very Low (-)**	**Prevent and reduce through management measures.** In accordance with Government Notice 704 (GN 704), the onsite management should: • Keep clean and dirty water separated. • Contain any dirty water within a system; and • Prevent the contamination of clean water. In order to achieve these objectives, the following stormwater management measures must be implemented on the site to ensure that that potential stormwater impacts are kept to a minimum: • Clean and dirty stormwater needs to be separated. Dirty stormwater may not be released into the environment and should be contained and treated on site. • All temporary storm water infrastructure (if any) on-site shall be maintained and kept clean throughout the prospecting period. • Immediate reporting of any polluting or potentially polluting incidents so that appropriate measures can be implemented.	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					• Fuel and oil spills shall be treated immediately by appropriate mop-up products. Several hydrocarbon absorption/remediation products (i.e., Spill kits) must be placed throughout the site. • Use of bunds or traps to ensure full containment of hydrocarbon and other hazardous materials are mandatory. • Any contaminated material is disposed of in an appropriate manner and the potential risks associated with such spills are limited. • Stormwater leaving the site must in no way be contaminated. • Ensure good housekeeping practices. • Increased runoff should be managed using berms and other suitable structures as required to ensure flow velocities are reduced; and • Removal of spills, rainwater and waste produced during clean-up of the bunds – shall be done in accordance with relevant specifications.	
	Potential Loss and degradation of wetlands	Surface Water	Construction and Operation	**Low (-)**	**Reduce through management measures.** • Erosion management and sediment controls should be implemented. This can be obtained by proper catchment land use, including stormwater management measures and sediment input controls. • It is critical that an alien vegetation control programme is implemented, as encroachment of alien vegetation is already apparent in the study area and is expected to increase as a result of the disturbances. • No further encroachment by surrounding residential and commercial developments should take place within 500 m of the wetlands. • Disturbance to any wetland crossings must be minimised and suitably rehabilitated. The design of bridges and pathways should allow for wetland soil conditions to be maintained both upstream and downstream of the crossing to such a degree that	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					wetland vegetation community structures upstream and downstream of the crossing are maintained. • It must be ensured that flow connectivity along the wetland features is maintained. • Regular maintenance of all bridges and pathways must take place in order to minimise the risk of further degradation to wetland habitat.	
	The site has sections which ranges between transformed, slightly impacted to natural, however, the onset of prospecting activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact vegetation and on the animals that use the area as habitat. All ridge and sensitive features should be avoided where possible as impacts will be more severe within these areas. Construction (or additional construction activities) will result in increase of potentially destructive movement within the compromised area.	Biodiversity	Construction and Operation	**Low (-)**	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within other specialist reports and Environmental Management Programme (EMPr). • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. • Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species.	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	If ridges cannot be avoided, impacts will occur and could possibly damage the integrity of the areas by the movement of the machinery and fragmentation caused by large machinery trying to get access to the areas if it is located within the ridge or rocky outcrop areas. The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. As noted, it is recommended that all ridge and sensitive features should be avoided where possible as impacts will be more severe within these areas.	Biodiversity	Construction and Operation	**Low (-)**	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within other specialist reports and Environmental Management Programme (EMPr). • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. • Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species. • Ensure routes are planned before hand to ensure damage is kept to a minimum as vehicles need to move into the ridge areas to obtain access to the prospecting boreholes. • As mentioned, plan and avoid sensitive features before the locations are selected and ideally avoid sensitive areas completely. Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species.	**Very Low (-)**
	Development related activities may lead to the loss of floral species of conservation concern. Ridges and conservation worthy areas should be avoided and includes Class 1 & Class 2 ridges found on the property, rocky outcrops,	Biodiversity	Construction and Operation	**Low (-)**	**Reduce through management measures.** • All footprint areas should remain as small as possible. • A survey for SCC species on the project footprint area should be undertaken by a suitably qualified specialist prior to the start of construction once the footprints are known. Appoint an ECO to oversee the activities and ensure that ecological aspects are kept in mind.	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	the Bloubank River and various of its tributaries as well as tributaries of the Magalies River. This will limit impacts on the natural biodiversity and prevent disturbance of these unique features present. The SCC Pearsonia bracteata is classified as Near Threatened (NT) in terms of the SANBI Red List and is considered to have a low likelihood of occurrence on the project area. Two (2) species protected in terms of the TNCA were identified to occur on the project area during the site visit, namely Cussonia paniculata (Highveld cabbage tree) and Protea roupelliae (Silver sugar bush). The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit.				• If any SCC are encountered within the subject property in the future, the following should be ensured: - If any threatened species will be disturbed, ensure effective relocation of individuals to suitable offset areas or within designated open space on the subject property. - All rescue and relocation plans should be overseen by a suitably qualified specialist. - Obtain relevant permits/consent, if applicable, for each protected or endangered floral species identified within the proposed development area that will be destroyed. • Human and vehicle movement should be restricted from taking place in sensitive habitats. • Ridges are considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.	

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	It may also result in the spread of the invaders already found on-site to other surrounding areas.					
	Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas.		Construction and Operation	**Low (-)**	**Reduce through management measures.** • Ensure awareness amongst all staff, contractors and visitors to site to not needlessly damage flora. • If required, a management plan for control of invasive/exotic plant species needs to be implemented for all footprint areas, especially if rehabilitation is found to be difficult or not successful and revegetation of the areas where vegetation has been removed is required. This will be ongoing until the end of the closure phase. • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees.	**Very Low (-)**
	Impacts on the water resources (and potential wetlands) located within and around the area designated for development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly leak from the vehicles and machines used to conduct the drilling.	Biodiversity	Construction and Operation	**Very Low (-)**	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within the wetland specialist report. • If possible, find an alternative placement for features where possible as to prevent placement within a wetland or wetland soils. The wetlands or associated buffer should be sufficient to protect ecological functioning of the area. • Keep spill kits and hazmat prevention kits on-site to remediate any spill immediately before reaching the natural environment. • Continuous rehabilitation of the area should occur until the drilling is completed and confirmed as rehabilitated.	**Very Low (-)**
	The results may be positive if rehabilitation has been done correctly and the site may be	Biodiversity	Rehabilitation	**Very Low (-)**	• Prevent impacts from reaching downstream water resources by ensuring no spillage and proper handling of infrastructure during removal.	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	rehabilitated back to a natural landscape. Initial movement around the site to ensure rehabilitation will have similar results as may be expected during the Construction Phase.				• Continuous rehabilitation of the area should occur until the drilling is completed and confirmed as rehabilitated.	
	Alteration of archaeological, historical and palaeontological resources that may be discovered during earthworks and drilling.	Cultural Heritage	Construction and Operation	**Very Low (-)**	**Protect heritage resources through developing and implementing procedures.** • It is recommended that the areas associated with the identified sites be avoided by the proposed prospecting activities. Should this not be possible, a qualified archaeologist must be present on-site during prospecting in order to limit potential impact on heritage resources • The 500 m buffer zone surrounding perennial/non-perennial rivers and dams, as well as the indicated areas associated with hills (gradient buffer) are potentially sensitive from a heritage perspective. Care should be exercised when prospecting in these vicinities. • It is advised that a qualified archaeologist be contacted whenever uncertainty regarding potential heritage remains are encountered. • Prospecting should not take place in the vicinity of stone cairns, potential burial sites, stonewalling, building ruins or any other heritage material or structures. • Should the prospecting outcome result in further development or construction, a full Phase 1 Archaeological Impact Assessment must be conducted on the affected area if triggered. Also, a full Phase 1 AIA must be done should the cumulative impact of the proposed prospecting exceed 0.5 ha. • Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the prospecting phase, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed,	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					all activities must be suspended, and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)). • From a heritage point of view, prospecting may proceed on the demarcated portions, subject to the abovementioned conditions and recommendations.	
	Visibility from sensitive receptors / visual scarring of the landscape as a result of the prospecting activities.	Aesthetic quality and sense of place	Construction and Operation	**Low (-)**	**Reduce through controlling management measures.** • Unnecessary lights should be switched off during the day and / or night to avoid light pollution. • If lighting is required, the lighting will be located in such a place and such a manner so as to minimise any impact on the surrounding community and fauna. • Install temporary lights that will not create a night sky glow. • Security lighting should be designed in such a way as to minimise emissions onto undisturbed areas on site and neighbouring properties. Light fittings should face downwards. • Housekeeping on site should be enforced. • Rehabilitation measures such as re-vegetation and plan to be implemented. • Reduce the prospecting period through careful planning and productive implementation of resources. • Plan the placement of lay-down areas and any potential temporary prospecting camps in order to minimise vegetation clearing. • Restrict the activities and movement of workers and vehicles to the immediate prospecting site and existing access roads. • Ensure that rubble, litter and issued materials are managed and removed regularly. • Ensure that all infrastructure and the site and general surrounds are maintained in a neat and appealing way; and Reduce and control dust through the use of approved dust suppression techniques.	**Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	Nuisance and health risks caused by an increase in the ambient noise level as a result of noise and vibration impacts associated with the operation of vehicles, machinery and equipment.	Health of landowners and occupiers Biodiversity	Construction and Operation	**Medium (-)**	**Reduce through controlling measures.** • Vehicles and machinery will be regularly serviced to ensure acceptable noise levels are not exceeded. • Silencers will be utilised where possible. • Heavy vehicle traffic should be routed away from noise sensitive areas where possible. • Noise levels should be kept within acceptable limits. All noise and sounds generated should adhere to South African Bureau of Standards (SABS) specifications for maximum allowable noise levels for construction sites. No pure tone sirens or hooters may be utilised except where required in terms of SABS standards or in emergencies. • With regard to unavoidable very noisy activities in the vicinity of noise sensitive areas, the Site Manager (SM) should liaise with local residents and a suitably qualified ecologist and how best to minimise impacts, and the local population should be kept informed of the nature and duration of intended activities. • The SM should take measures to discourage labourers from loitering in the area, causing noise disturbance. • Noise impacts should be minimised by restricting the hours (between 06h00 and 18h00 on Monday to Friday, and 06h00 and 13h00 on Saturdays), during which the offending activities are carried out and, where possible, by insulating machinery and/or enclosing areas of activity. • No noisy activities to occur on Sundays or public holidays. • Personal Protective Equipment to all persons working in areas where high levels of noise can be expected; Signs where it is compulsory. Regular inspections and maintenance of equipment, vehicles and machinery to prevent unnecessary noise.	**Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	Increased dust pollution due to vegetation clearance and vehicles driving on gravel roads and drilling.	Aesthetic environment Sense of Place Air quality Biodiversity	Construction and Operation	**Medium (-)**	**Reduce through controlling measures.** • Dust suppression shall be implemented during dry periods and windy conditions. • All exposed surfaces should be minimised in terms of duration of exposure to wind and stormwater. • Excavation, handling and transportation of erodible materials shall be avoided under high wind conditions (excess of 35km/hr) or when a visible dust plume is present. • Ensure that the shortest routes are used for material transport. • Ensure that stockpile height is kept to a minimum. • Minimise travel speed on unpaved roads. • Implement and actively monitor dust fallout generated in the 8 major wind directions on the borders of the site. • Implement monthly site inspection to check for possible areas of dust generation not addressed or not effectively managed. • Spray areas to be cleared with water. • Ensure minimum travel distance between working areas and stockpiles. • Ensure that topsoil for stockpiles is sprayed with water before tipping to prevent dust generation. • Ensure graded areas are sprayed with water. • Minimise the number of graded areas. • Ensure that shortest routes are used for material transport. Load and offload material, as far as possible, downwind of topsoil stockpiles.	**Low (-)**
	Gaseous emissions from vehicles and machinery may cause an impact on ambient air quality.	Health of landowners and occupiers	Construction and Operation	**Medium (-)**	• All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks. • Proper planning of movements (vehicle trips) and working of machinery should take place, in order to avoid unnecessary trips and hours of operation.	**Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	Generation of additional general waste, litter and building rubble and hazardous waste.	Biodiversity Health and safety Soil Surface water systems	Construction and Operation	**Medium (-)**	**Control through management measures.** • A central waste storage and transition area shall be established within the site camp. • The central waste storage and transition area shall be surfaced and demarcated appropriately. • Portable wheelie bins shall be placed throughout the site camp as well as at the remainder of the site and at all working areas in the field. • Wheelie bins shall be colour coded and labelled to identify the waste stream for which it is intended. • All portable wheelie bins and other containers shall be emptied at the central waste storage and transition area a minimum of once a week or when filled, as to avoid waste build up. • The waste shall be removed (within 30 days) by a licensed waste service provider as shall be disposed of at a licensed waste landfill site and records of safe disposal (as required for hazardous wastes) shall be supplied to the Contractor. These records shall be kept on site by the ESM. • Wherever possible and practical, waste materials generated on site must be recycled; and • Waste specific (hazardous, timber, steel etc.) mitigation measures to be implemented.	**Low (-)**
	Minor impact caused by need for services i.e., water, electricity and sewerage systems during the prospecting phase causing additional strain on natural resources and service infrastructure.	Natural resources including water and energy resources	Construction and Operation	**Low (-)**	**Reduce through controlling management measures.** • Energy savings measures to be implemented at the site e.g.: ➢ No lights to be switched on unnecessarily. ➢ Only security lights to be switched on at night. • Energy saving bulbs to be installed; and • Water should be recycled as far as possible to avoid any additional water usage.	**Very Low (-)**
	Minor change in traffic patterns as a result of traffic entering and exiting the site on the	Traffic	Construction and Operation	**Low (-)**	**Reduce through controlling management measures.** • Where feasible heavy vehicles should not operate on public roads during peak hours; and	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	surrounding road infrastructure and existing traffic.				• Heavy vehicles should adhere to the speed limit of the road.	
	Nuisance, health and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.	Safety of workers, contractors and landowners and occupiers	Construction and Operation	**Medium (-)**	**Prevent through controlling management measures.** • Drivers will be enforced to keep setting speed limits. • Trucks will be in a road-worthy condition. • Roads and intersections will be signposted clearly. Only main roads should be used. • Where feasible vehicles should not operate on public roads during peak hours. • Vehicles should adhere to the speed limit of the road. • Heavy vehicles should always travel with their head lights switched on. • Heavy vehicles should not stop on the road to pick up hitchhikers – No stopping on the road approaching the site will be allowed. • Single directional traffic shall be controlled through a stop-go system or any other appropriate traffic control method. • Cold Gold (Pty) Ltd shall be responsible for ensuring that suitable access is maintained for public traffic to all relevant businesses and properties; and • All traffic accommodation measures are to conform to the latest edition of the South African Road Signs Manual.	**Low (-)**
	Possibility of prospecting activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.	Biodiversity Health and safety of landowners, occupiers, visitors and workers	Construction and Operation	**Medium (-)**	**Prevent through controlling management measures.** • All workers will be sensitised to the risk of fire. • Smoking is only allowed in designated smoking areas and disposal of cigarette butts safely in sand buckets. • The Applicant shall ensure that the basic fire-fighting equipment is available on the site. • Extinguishers should be located outside hazardous materials and chemicals storage containers. • Fire response and evacuation: ➢ An Emergency Plan (including Fire Protection, Response and Evacuation Plan) is to be prepared by the Applicant and conveyed to all staff on the site'	**Very Low (-)**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					• Identify major risks to minimise the environmental impacts e.g., air pollution and contaminated effluent runoff.	
	Potential creation of very limited extent short term employment opportunities for the local community, during the prospecting phase.	Socio-economic	Construction and Operation	**Low (+)**	• Local labour to be sourced where possible.	**Low (+)**
	Multiplier effects on local economy will be positive, but very limited in extent and only short term.	Socio-economic	Construction and Operation	**Low (+)**	• Supplies to be bought locally as far as possible.	**Low (+)**

d) Summary of specialist reports

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form): -

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Wetland Assessment	• Erosion management and sediment controls should be implemented. This can be obtained by proper catchment land use, including stormwater management measures and sediment input controls. • It is critical that an alien vegetation control programme is implemented, as encroachment of alien vegetation is already apparent in the study area and is expected to increase as a result of the disturbances. • No further encroachment by surrounding residential and commercial developments should take place within 500 m of the wetlands. • Disturbance to any wetland crossings must be minimised and suitably rehabilitated. The design of bridges and pathways should allow for wetland soil conditions to be maintained both upstream and downstream of the crossing to such a degree that wetland vegetation community structures upstream and downstream of the crossing are maintained. • It must be ensured that flow connectivity along the wetland features is maintained. • Regular maintenance of all bridges and pathways must take place in order to minimise the risk of further degradation to wetland habitat.	X	Basic Assessment Report and EMPR Part B (EMPR)
Ecological and Biodiversity Scan	**Pre-Construction Phase** • No SCC was encountered during the field assessment, but listed species as well as possible occurrences of a SCC have been flagged for the development, therefore, once	X	Basic Assessment Report and EMPR Part B (EMPR)

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	the footprints have been finalised, a scan should be conducted of the footprints to ensure no SCC occur on the footprint and will be damaged. This can be done by the ECO appointed before the onset of the project and boreholes should be moved to accommodate any sensitive features or species found in this scan. • General preference in terms of layout will be within those areas delineated as Low sensitivity, such as the agricultural areas and other residential land uses. Unfortunately, natural grassland will always have elevated sensitivity, especially if it is still considered to have a natural composition to an extent. • It is firstly recommended that the prospecting boreholes be focussed away from sensitive areas and buffer zones as delineated during the sensitivity assessment. • General preference in terms of layout will be within those areas delineated as Low sensitivity or towards the north of the properties near the main access road (if possible) or towards the far south. This will ensure that existing roads may be utilised and will prevent unnecessary road impacts or vegetation clearance practices. • If the layout cannot be moved to stay out of the suitable buffer zones, the layout design needs to be pre-approved with Departments if required in terms of the National Water Act, 1998 (Act No. 36 of 1998) (Water Use Licence) if activities are within 500 metres of wetlands or within 100 m of drainage lines: and • Adhering to focus points keeping clear of sensitivity areas delineated and delineated buffers will also ensure minimal impacts related to vegetation clearance practices. **Construction and Operational Phases**		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	• A suitable responsible person should be appointed during the construction phase to ensure that no unnecessary ecological impacts occur, or animal is harmed and no breeding ground or unexpected discovery of red listed/sensitive animals that may require relocation is handled incorrectly by uninformed personnel – refer to requirement during planning phase. • Prevent significant alteration to the ecosystems in the area, specifically, the riverine and drainage lines as well as rocky outcrops associated with the riverine terrains encountered. All of these have been delineated a high sensitivity rating. • Prevent the needless loss of or damage to flora particularly with regard to protected, endemic, near endemic and rare species to keep the specific habitat type as unaltered as possible. This will include the active management of Alien and Invasive species around the perimeter and within the development footprint. • Prevent death, injury or hindrance to any fauna encountered during the project phases, and particularly with regard to any possible protected or endemic species. • Prevent significant alteration to the ecosystems in the area, specifically, the possible wetland zones (needs to be delineated), adhere to all measures as described in the specialist wetland assessment. • Prevent impacts from reaching the downstream river environments at any stage of the development as these will impact the aquatic life within the systems as well as impact all the animals using the water resources on-site as well as downstream impacts. **Ecological Mitigation and Management measures** • Develop in terms of the Gauteng Conservation Plan (Please refer to Figure 7) by staying clear of areas delineated as irreplaceable (Drainage/riverine areas and ridges) and those		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	labelled as Protected (outside the property borders on the northern side associated with the Magaliesberg features). • All injured animals sighted during the development should be protected and moved to receive rehabilitation at the designated centre (the SHEQ officer should find out which centres will be appropriate for the species in the proximity) and should not be handled by the employees under any circumstance. Clear protocol should be developed on the matter. • All activities should be preferably restricted to one area within the farms and activity and access into larger intact areas should be avoided. Strict measurements should be implemented. No foraging, food and wood collecting within the veld should be allowed by employees or workers. • All activity should be avoided in restricted areas and possible wetland zones, incorporating those findings from the wetland assessment done for the project, unless authorisations are obtained for this, then management of these activities will be important. • All noisy equipment should be avoided or mitigated to lessen sound levels as well as vibration levels should be controlled to limit impact on biodiversity and sensitive species. • Keep spill kits and hazmat prevention kits on-site to remediate any spill immediately before reaching the natural environment. As mentioned, this will be prudent in this development since petroleum and other hydrocarbons associated with the vehicle-based activities (drilling and heavy machinery) are likely to be spilled in the environment if not managed well. Spill kits and drip trays should be kept close by during prospecting drilling.		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	• Adhere to all management and mitigation measures as prescribed within the wetland specialist report and Environmental Management Programme. • Ensure awareness amongst all staff, contractors and visitors to site to not needlessly harm or hinder animals or damage flora that is endemic and serve as habitat for the animals inhabiting the area. • Allow animals to escape areas of activity freely and do not hinder their movement. • All activities should be preferably restricted to one area as delineated within the formal layout. Strict measurements should be implemented. • Ensure proper rehabilitation and closure of the drill holes implemented, this will prevent faunal species getting trapped and/or falling to their death as well as ensure that vegetation structure recovers quickly. If rehabilitation fails and re-establishment of vegetation unsuccessful, active re-vegetation practices is recommended including management of aliens and invasive until the natural vegetation has recovered and the risk for infestation of invasive on the footprints have been reduced. **Monitoring** • Monitoring framework should be instigated and managed by their responsible body and the following system may enforce good practice: • Implement an “Observe and report” approach which will enable employees to report any disturbance of flora/fauna or degradation that they encounter. • No impacts or monitoring is foreseen for the prospecting boreholes after they have been filled and once vegetation structure has been restored.		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	• No prospecting activities should be allowed on the identified and shown ridges, as this will impact on sensitive niches and features as well as impact the provincial conservation targets in terms of ecology.		
Cultural heritage desktop assessment	The following recommendations were made in terms of the National Heritage Resources Act (Act No. 25 of 1999) in order to avoid the destruction of heritage remains in areas demarcated for prospecting: - It is recommended that the areas associated with the identified sites be avoided by the proposed prospecting activities. Should this not be possible, a qualified archaeologist must be present on-site during prospecting in order to limit potential impact on heritage resources. - The 500 m buffer zone surrounding perennial/non-perennial rivers and dams, as well as the indicated areas associated with hills (gradient buffer) are potentially sensitive from a heritage perspective. Care should be exercised when prospecting in these vicinities. - It is advised that a qualified archaeologist be contacted whenever uncertainty regarding potential heritage remains are encountered. - Prospecting should not take place in the vicinity of stone cairns, potential burial sites, stonewalling, building ruins or any other heritage material or structures. - Should the prospecting outcome result in further development or construction, a full Phase 1 Archaeological Impact Assessment must be conducted on the affected area if triggered. Also, a full Phase 1 AIA must be done should the cumulative impact of the proposed prospecting exceed 0.5 ha.	X	Basic Assessment Report and EMPR Part B (EMPR)

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the prospecting phase, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed, all activities must be suspended, and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)). - From a heritage point of view, prospecting may proceed on the demarcated portions, subject to the abovementioned conditions and recommendations.		

Attach copies of Specialist Reports as appendices (Please refer to ***Appendix 8 - 11***)

e) Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment.

Table 16: Summary of the Possible Impacts Associated with the Proposed Prospecting

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
Minor loss and disturbance to topsoil as a result of clearing of vegetation for drilling. When vegetation is cleared and the topsoil is stripped, the soil's natural structure is disturbed and as a result the natural cycle is broken exposing the bare soil to erosion.	**Low (-)**	**Prevent and reduce through management measures.** • Demarcation of prospecting areas: • Areas to be prospected must be clearly demarcated.	**Very Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
Vehicles driving on these soils causes compaction of soils and reduces the soil's ability to be penetrated by root growth. Compaction also increases erosion potential. When soils are not stripped and stockpiled according to the soil stripping guidelines these soils would have lost their natural physical and chemical properties, reducing the topsoil's ability to be a plant growth medium. The above factors all contribute to a loss of the topsoil's ability to be a resource through alterations and removal.		• Sensitive areas to be avoided as prescribed by specialist studies must be avoided and prospecting may not take place in these demarcated sensitive areas. • A final prospecting plan must be compiled clearly showing areas to be drilled and no-go areas. The plan must be approved by all specialists. • A final prospecting plan will be compiled and provided to all registered I&AP's 30 days before the commencement of the physical prospecting activities. **Stripping of topsoil:** • Clearing of areas to take place a maximum of one month prior to intended prospecting in the area. • Stripping of topsoil will not take place during rain or excessive wind; and • The top 30 cm of vegetation and topsoil is to be stripped from the area to be prospected. **Storage of topsoil / overburden:** • Topsoil (top 30cm) is to be stored in predetermined topsoil berms, (+/- 5m) outside the boundary of the specific area; and • Topsoil stockpiles will be restricted to 1.5 to 2m in height.	
Hydrocarbon spills on soil can occur where heavy machinery and vehicles are parked such as the hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is always a chance of these breaking down and/or leaking.	**Very Low (-)**	**Prevent and reduce and remedy through management measures.** • All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks. • All leaks will be cleaned up immediately using an absorbent material and spill kits, in the prescribed manner; and • The approved Integrated Water and Waste Management Plan to be implemented. ***Hydrocarbons and hazardous waste*** • All hazardous waste generated shall be kept separate and shall not be mixed with general waste; and • All hazardous waste shall be stored within a sealed drum on an impermeable surfaced area within the central waste storage and transition area.	**Very Low (-)**
Stormwater, erosion and siltation impacts due to a lack of implementing temporary measures to manage stormwater run-off quantity and quality.	**Low (-)**	**Prevent and reduce and remedy through management measures.** • A generic Stormwater Management Plan (SMP) to be developed for the collective area where prospecting will occur, (or the existing SMP updated, where applicable for present and future activities) and should include the management	**Very Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		of stormwater during drilling, as well as the installation of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area. • Temporary stormwater management systems (such as sandbags) will be installed to prevent stormwater from entering or exiting the area where prospecting will occur, which could result in silt laden surface water from draining into natural drainage lines • The slopes of the area where prospecting activities will occur, should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scrub (hydrologic action by water that causes erosion). A maximum gradient of 1:3 is recommended. • If necessary, temporary diversion channels should be constructed ahead of the stockpiles (if relevant) to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream (down gradient) of the prospecting area. • Existing vegetation must be retained as far as possible to minimise erosion problems. • Rehabilitation of the prospecting area shall be planned and completed (after conclusion of the prospecting activities) in such a way that the run-off water (if any) will not cause erosion. • Visual inspections shall be done on a weekly basis with regard to the stability of the temporary water control structures, erosion and siltation (if required). • Sediment-laden run-off from cleared areas should be prevented from entering rivers and streams. • No river or surface water may be affected by silt emanating from the prospecting area • No wastewater may run freely into any of the surrounding naturally vegetated areas.	
Contamination of stormwater runoff and ground water, caused by chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from heavy vehicles and machinery and fuel storage area.	**Very Low (-)**	**Prevent and reduce through management measures.** In accordance with Government Notice 704 (GN 704), the onsite management should: • Keep clean and dirty water separated. • Contain any dirty water within a system; and • Prevent the contamination of clean water.	**Very Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		In order to achieve these objectives, the following stormwater management measures must be implemented on the site to ensure that that potential stormwater impacts are kept to a minimum: • Clean and dirty stormwater needs to be separated. Dirty stormwater may not be released into the environment and should be contained and treated on site. • All temporary storm water infrastructure (if any) on-site shall be maintained and kept clean throughout the prospecting period. • Immediate reporting of any polluting or potentially polluting incidents so that appropriate measures can be implemented. • Fuel and oil spills shall be treated immediately by appropriate mop-up products. Several hydrocarbon absorption/remediation products (i.e., Spill kits) must be placed throughout the site. • Use of bunds or traps to ensure full containment of hydrocarbon and other hazardous materials are mandatory. • Any contaminated material is disposed of in an appropriate manner and the potential risks associated with such spills are limited. • Stormwater leaving the site must in no way be contaminated. • Ensure good housekeeping practices. • Increased runoff should be managed using berms and other suitable structures as required to ensure flow velocities are reduced; and • Removal of spills, rainwater and waste produced during clean-up of the bunds – shall be done in accordance with relevant specifications.	
Potential Loss and degradation of wetlands	**Low (-)**	**Reduce through management measures.** • Erosion management and sediment controls should be implemented. This can be obtained by proper catchment land use, including stormwater management measures and sediment input controls. • It is critical that an alien vegetation control programme is implemented, as encroachment of alien vegetation is already apparent in the study area and is expected to increase as a result of the disturbances. • No further encroachment by surrounding residential and commercial developments should take place within 500 m of the wetlands. • Disturbance to any wetland crossings must be minimised and suitably rehabilitated. The design of bridges and pathways should allow for wetland soil conditions to be maintained both upstream and downstream of the crossing to	

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		such a degree that wetland vegetation community structures upstream and downstream of the crossing are maintained. • It must be ensured that flow connectivity along the wetland features is maintained. • Regular maintenance of all bridges and pathways must take place in order to minimise the risk of further degradation to wetland habitat.	
The site has sections which ranges between transformed, slightly impacted to natural, however, the onset of prospecting activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact vegetation and on the animals that use the area as habitat. All ridge and sensitive features shown in Figure 6 and Figure 20 should be avoided where possible as impacts will be more severe within these areas. Construction (or additional construction activities) will result in increase of potentially destructive movement within the compromised area.	**Low (-)**	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within other specialist reports and Environmental Management Programme (EMPr). • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. • Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species.	**Low (-)**
If ridges cannot be avoided, impacts will occur and could possibly damage the integrity of the areas by the movement of the machinery and fragmentation caused by large machinery trying to get access to the areas if it is located within the ridge or rocky outcrop areas. The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. As noted, it is recommended that all ridge and sensitive features shown in Figure 6 and Figure 15 should be avoided where possible as impacts will be more severe within these areas.	**Low (-)**	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within other specialist reports and Environmental Management Programme (EMPr). • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. • Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species.	**Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		• Ensure routes are planned before hand to ensure damage is kept to a minimum as vehicles need to move into the ridge areas to obtain access to the prospecting boreholes. • As mentioned, plan and avoid sensitive features before the locations are selected and ideally avoid sensitive areas completely. Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species.	
Development related activities may lead to the loss of floral species of conservation concern. Ridges and conservation worthy areas should be avoided and includes Class 1 & Class 2 ridges found on the property, rocky outcrops, the Bloubank River and various of its tributaries as well as tributaries of the Magalies River. This will limit impacts on the natural biodiversity and prevent disturbance of these unique features present. The SCC Pearsonia bracteata is classified as Near Threatened (NT) in terms of the SANBI Red List and is considered to have a low likelihood of occurrence on the project area. Two (2) species protected in terms of the TNCA were identified to occur on the project area during the site visit, namely Cussonia paniculata (Highveld cabbage tree) and Protea roupelliae (Silver sugar bush). The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas.	**Low (-)**	**Reduce through management measures.** • All footprint areas should remain as small as possible. • A survey for SCC species on the project footprint area should be undertaken by a suitably qualified specialist prior to the start of construction once the footprints are known. Appoint an ECO to oversee the activities and ensure that ecological aspects are kept in mind. • If any SCC are encountered within the subject property in the future, the following should be ensured: - If any threatened species will be disturbed, ensure effective relocation of individuals to suitable offset areas or within designated open space on the subject property. - All rescue and relocation plans should be overseen by a suitably qualified specialist. - Obtain relevant permits/consent, if applicable, for each protected or endangered floral species identified within the proposed development area that will be destroyed. • Human and vehicle movement should be restricted from taking place in sensitive habitats. • Ridges are considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.	**Low (-)**
Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure	**Low (-)**	**Reduce through management measures.** • Ensure awareness amongst all staff, contractors and visitors to site to not needlessly damage flora.	**Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas.		• If required, a management plan for control of invasive/exotic plant species needs to be implemented for all footprint areas, especially if rehabilitation is found to be difficult or not successful and revegetation of the areas where vegetation has been removed is required. This will be ongoing until the end of the closure phase. • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees.	
Impacts on the water resources (and potential wetlands) located within and around the area designated for development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly leak from the vehicles and machines used to conduct the drilling.	**Low (-)**	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within the wetland specialist report. • If possible, find an alternative placement for features where possible as to prevent placement within a wetland or wetland soils. The wetlands or associated buffer should be sufficient to protect ecological functioning of the area. • Keep spill kits and hazmat prevention kits on-site to remediate any spill immediately before reaching the natural environment. • Continuous rehabilitation of the area should occur until the drilling is completed and confirmed as rehabilitated.	**Low (-)**
The results may be positive if rehabilitation has been done correctly and the site may be rehabilitated back to a natural landscape. Initial movement around the site to ensure rehabilitation will have similar results as may be expected during the Construction Phase.	**Low (-)**	• Prevent impacts from reaching downstream water resources by ensuring no spillage and proper handling of infrastructure during removal. • Continuous rehabilitation of the area should occur until the drilling is completed and confirmed as rehabilitated.	**Low (-)**
Alteration of archaeological, historical and palaeontological resources that may be discovered during earthworks and drilling.	**Low (-)**	**Protect heritage resources through developing and implementing procedures.** • It is recommended that the areas associated with the identified sites be avoided by the proposed prospecting activities. Should this not be possible, a qualified archaeologist must be present on-site during prospecting in order to limit potential impact on heritage resources • The 500 m buffer zone surrounding perennial/non-perennial rivers and dams, as well as the indicated areas associated with hills (gradient buffer) are potentially sensitive from a heritage perspective. Care should be exercised when prospecting in these vicinities.	**Very Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		• It is advised that a qualified archaeologist be contacted whenever uncertainty regarding potential heritage remains are encountered. • Prospecting should not take place in the vicinity of stone cairns, potential burial sites, stonewalling, building ruins or any other heritage material or structures. • Should the prospecting outcome result in further development or construction, a full Phase 1 Archaeological Impact Assessment must be conducted on the affected area if triggered. Also, a full Phase 1 AIA must be done should the cumulative impact of the proposed prospecting exceed 0.5 ha. • Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the prospecting phase, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed, all activities must be suspended, and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)). • From a heritage point of view, prospecting may proceed on the demarcated portions, subject to the abovementioned conditions and recommendations.	
Visibility from sensitive receptors / visual scarring of the landscape as a result of the prospecting activities.	**Low (-)**	**Reduce through controlling management measures.** • Unnecessary lights should be switched off during the day and / or night to avoid light pollution. • If lighting is required, the lighting will be located in such a place and such a manner so as to minimise any impact on the surrounding community and fauna. • Install temporary lights that will not create a night sky glow. • Security lighting should be designed in such a way as to minimise emissions onto undisturbed areas on site and neighbouring properties. Light fittings should face downwards. • Housekeeping on site should be enforced. • Rehabilitation measures such as re-vegetation and plan to be implemented. • Reduce the prospecting period through careful planning and productive implementation of resources. • Plan the placement of lay-down areas and any potential temporary prospecting camps in order to minimise vegetation clearing. • Restrict the activities and movement of workers and vehicles to the immediate prospecting site and existing access roads.	**Very Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		• Ensure that rubble, litter and issued materials are managed and removed regularly. • Ensure that all infrastructure and the site and general surrounds are maintained in a neat and appealing way; and Reduce and control dust through the use of approved dust suppression techniques.	
Nuisance and health risks caused by an increase in the ambient noise level as a result of noise and vibration impacts associated with the operation of vehicles, machinery and equipment.	**Medium (-)**	**Reduce through controlling measures.** • Vehicles and machinery will be regularly serviced to ensure acceptable noise levels are not exceeded. • Silencers will be utilised where possible. • Heavy vehicle traffic should be routed away from noise sensitive areas where possible. • Noise levels should be kept within acceptable limits. All noise and sounds generated should adhere to South African Bureau of Standards (SABS) specifications for maximum allowable noise levels for construction sites. No pure tone sirens or hooters may be utilised except where required in terms of SABS standards or in emergencies. • With regard to unavoidable very noisy activities in the vicinity of noise sensitive areas, the Site Manager (SM) should liaise with local residents and a suitably qualified ecologist and how best to minimise impacts, and the local population should be kept informed of the nature and duration of intended activities. • The SM should take measures to discourage labourers from loitering in the area, causing noise disturbance. • Noise impacts should be minimised by restricting the hours (between 06h00 and 18h00 on Monday to Friday, and 06h00 and 13h00 on Saturdays), during which the offending activities are carried out and, where possible, by insulating machinery and/or enclosing areas of activity. • No noisy activities to occur on Sundays or public holidays. • Personal Protective Equipment to all persons working in areas where high levels of noise can be expected; Signs where it is compulsory. Regular inspections and maintenance of equipment, vehicles and machinery to prevent unnecessary noise.	**Low (-)**
Increased dust pollution due to vegetation clearance and vehicles driving on gravel roads and drilling.	**Medium (-)**	**Reduce through controlling measures.** • Dust suppression shall be implemented during dry periods and windy conditions. • All exposed surfaces should be minimised in terms of duration of exposure to wind and stormwater.	**Very Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		• Excavation, handling and transportation of erodible materials shall be avoided under high wind conditions (excess of 35km/hr) or when a visible dust plume is present. • Ensure that the shortest routes are used for material transport. • Ensure that stockpile height is kept to a minimum. • Minimise travel speed on unpaved roads. • Implement and actively monitor dust fallout generated in the 8 major wind directions on the borders of the site. • Implement monthly site inspection to check for possible areas of dust generation not addressed or not effectively managed. • Spray areas to be cleared with water. • Ensure minimum travel distance between working areas and stockpiles. • Ensure that topsoil for stockpiles is sprayed with water before tipping to prevent dust generation. • Ensure graded areas are sprayed with water. • Minimise the number of graded areas. • Ensure that shortest routes are used for material transport. Load and offload material, as far as possible, downwind of topsoil stockpiles.	
Gaseous emissions from vehicles and machinery may cause an impact on ambient air quality.	**Medium (-)**	• All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks. • Proper planning of movements (vehicle trips) and working of machinery should take place, in order to avoid unnecessary trips and hours of operation.	**Low (-)**
Generation of additional general waste, litter and building rubble and hazardous waste.	**Medium (-)**	**Control through management measures.** • A central waste storage and transition area shall be established within the site camp. • The central waste storage and transition area shall be surfaced and demarcated appropriately. • Portable wheelie bins shall be placed throughout the site camp as well as at the remainder of the site and at all working areas in the field. • Wheelie bins shall be colour coded and labelled to identify the waste stream for which it is intended. • All portable wheelie bins and other containers shall be emptied at the central waste storage and transition area a minimum of once a week or when filled, as to avoid waste build up.	**Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
		• The waste shall be removed (within 30 days) by a licensed waste service provider as shall be disposed of at a licensed waste landfill site and records of safe disposal (as required for hazardous wastes) shall be supplied to the Contractor. These records shall be kept on site by the ESM. • Wherever possible and practical, waste materials generated on site must be recycled; and • Waste specific (hazardous, timber, steel etc.) mitigation measures to be implemented.	
Minor impact caused by need for services i.e., water, electricity and sewerage systems during the prospecting phase causing additional strain on natural resources and service infrastructure.	**Low (-)**	**Reduce through controlling management measures.** • Energy savings measures to be implemented at the site e.g.: ➢ No lights to be switched on unnecessarily. ➢ Only security lights to be switched on at night. • Energy saving bulbs to be installed; and • Water should be recycled as far as possible to avoid any additional water usage.	**Very Low (-)**
Minor change in traffic patterns as a result of traffic entering and exiting the site on the surrounding road infrastructure and existing traffic.	**Low (-)**	**Reduce through controlling management measures.** • Where feasible heavy vehicles should not operate on public roads during peak hours; and • Heavy vehicles should adhere to the speed limit of the road.	**Very Low (-)**
Nuisance, health and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.	**Medium (-)**	**Prevent through controlling management measures.** • Drivers will be enforced to keep setting speed limits. • Trucks will be in a road-worthy condition. • Roads and intersections will be signposted clearly. Only main roads should be used. • Where feasible vehicles should not operate on public roads during peak hours. • Vehicles should adhere to the speed limit of the road. • Heavy vehicles should always travel with their head lights switched on. • Heavy vehicles should not stop on the road to pick up hitchhikers – No stopping on the road approaching the site will be allowed. • Single directional traffic shall be controlled through a stop-go system or any other appropriate traffic control method. • Cold Gold (Pty) Ltd shall be responsible for ensuring that suitable access is maintained for public traffic to all relevant businesses and properties; and • All traffic accommodation measures are to conform to the latest edition of the South African Road Signs Manual.	**Very Low (-)**

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
Possibility of prospecting activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.	**Medium (-)**	**Prevent through controlling management measures.** • All workers will be sensitised to the risk of fire. • Smoking is only allowed in designated smoking areas and disposal of cigarette butts safely in sand buckets. • The Applicant shall ensure that the basic fire-fighting equipment is available on the site. • Extinguishers should be located outside hazardous materials and chemicals storage containers. • Fire response and evacuation: ➢ An Emergency Plan (including Fire Protection, Response and Evacuation Plan) is to be prepared by the Applicant and conveyed to all staff on the site' • Identify major risks to minimise the environmental impacts e.g., air pollution and contaminated effluent runoff.	**Very Low (-)**
Potential creation of very limited extent short term employment opportunities for the local community, during the prospecting phase.	**Low (+)**	• Local labour to be sourced where possible.	**Low (+)**
Multiplier effects on local economy will be positive, but very limited in extent and only short term.	**Low (+)**	• Supplies to be bought locally as far as possible.	**Low (+)**

(ii) Final Site Map

*(Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as **Appendix 4**)*

The specific locations of intrusive drilling activities will be determined during Phase 1 of the Prospecting Works Programme. All infrastructure to be developed will be mobile and temporary. A Prospecting Plan will be developed during the phase 1 of the prospecting activities. The prospecting plan will include a detailed map that will show the following:

- Sensitive areas (No-Go) as determined by wetland, ecological and heritage studies where no prospecting will be allowed.
- 500m Buffer from any river and drainage lines
- Tourism facilities
- access routes to proposed drilling locations

The finale drilling plan will be provided to the ecological, wetland and heritage specialist for approval.

The final drilling plan will also be provided to affected landowners and the DMRE for comment and inputs.

(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.

Please refer to Table 16.

f) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr.

(Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation).

The following management objectives and impact management outcomes are recommended for inclusion in the EMPR:

- Biodiversity: Prevent and / or restrict the loss of indigenous fauna and flora as far as possible.
- Physical aspects: Prevent and / or restrict the impact on soils and surface water.

- Social Aspects: Ensure the health and safety of employees of Cold Gold (Pty) Ltd and any contractors associated with the development and operation of the proposed activity as well as the surrounding community and visitors.
- Heritage: Ensure the protection of any potential heritage features or objects that may be excavated during the proposed development.

g) Aspects for inclusion as conditions of Authorisation

(Any aspects which must be made conditions of the Environmental Authorisation)

The following aspects are recommended to be included as conditions in the Environmental Authorisation:

- The EMPR is a contractual document and must be implemented at all times during the prospecting phase.
- An independent environmental control officer (ECO) must be appointed to monitor the implementation of the EMPR and audit reports to be kept by the applicant.
- All contractors and employees of Cold Gold (Pty) Ltd must be made aware of the EMPR and its requirements as well as the impact of not implementing the measures of the EMPR.
- Copies of the EMPR, Integrated Environmental Authorisation and any emergency procedures and method statements, must be kept on site and be available on request of the Competent Authority.

h) Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

- All information provided to the environmental team by the applicant and I&APs was correct and valid at the time that it was provided.
- The investigations undertaken by specialists during the BA process, indicate the development site as suitable and technically acceptable, except for the northern portions, which are sensitive and recommended to be excluded from prospecting.
- It is not always possible to involve all I&APs individually, however, every effort has been made to involve as many affected stakeholders as possible.
- The information provided by the applicant and specialists was accurate and unbiased; and
- The scope of this investigation is limited to assessing the environmental impacts associated with the construction, operation and closure phases of the proposed activity.

i) Reasoned opinion as to whether the proposed activity should or should not be authorised

i) Reasons why the activity should be authorised or not

In general, it is recognised that the proposed prospecting activities have the potential to pose various risks to the environment as well as to the residents or businesses in the surrounding area. However, based on the findings of this BAR documented in this report, all impacts can be mitigated to insignificant levels.

This report shows that the proposed development has the potential to provide socio-economic benefits to the local and regional communities. The EAP therefore recommends that the proposed activities be approved on condition that the EMPR is strictly implemented and monitored for compliance and that the northern portions of the study area are excluded from prospecting.

Not implementing the prospecting activities will result in a loss of information of mineral reserves present on the study area. Should economically feasible reserves exist on the study area and the applicant cannot prospect, the opportunity to utilise the reserves will be lost, i.e., the minerals will be sterilised, and resultant socio-economic benefits will be lost.

The proposed prospecting activities has the potential to have a negative impact on the ecological environment as well as the social environment of the area. These impacts, however, can potentially be prevented, minimised, mitigated and managed to low and very low levels, as shown through the impact assessment.

ii) Conditions that must be included in the authorisation

- The EMPR is a contractual document and must be implemented at all times during the prospecting phase.
- An independent environmental control officer (ECO) must be appointed to monitor the implementation of the EMPR and audit reports to be kept by the applicant.
- All contractors and employees of Cold Gold (Pty) Ltd must be made aware of the EMPR and its requirements as well as the impact of not implementing the measures of the EMPR.
- Copies of the EMPR, Integrated Environmental Authorisation and any emergency procedures and method statements, must be kept on site and be available on request of the Competent Authority.

11. Period for which the Environmental Authorisation is required.

This Environmental Authorisation is therefore required for a period 5 years.

12. Undertaking

(Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report).

Please refer to the EMPR in Part B of this document.

13. Financial Provision

(State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation).

The closure cost assessment has been developed based on the GNR 1147 regulations and is included as Appendix 11. The financial provision for each of the prospecting rights were calculated at **R 51 863.86** excl vat. The calculation of the rehabilitation cost is included in Appendix 11.

iii) Explain how the aforesaid amount was derived

The financial provision amount will be calculated utilising the methodology as prescribed by the Have been developed based on the GNR 1147 regulations.

iv) Confirm that this amount can be provided for from operating expenditure

(*Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).*

The applicant submits that it is a mining company and is able to fund the planned prospecting from its operational budget. It is confirmed that the amount for financial provision is anticipated to be an operating cost and is provided for as such in the Prospecting Work Programme.

14. Specific Information required by the competent Authority

v) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the: -

(1) Impact on the socio-economic conditions of any directly affected person

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner,

lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix).

Potential impacts on landowners, land occupiers, communities or individuals or competing land uses in the area include:

- Potential soil pollution which may result from any hydrocarbon spills where heavy machinery and vehicles are parked such as the hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is always a chance of these breaking down and/or leaking.
- Contamination of stormwater runoff and ground water, caused by chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from heavy vehicles and machinery and fuel storage area.
- Visual impacts: Visibility from sensitive receptors / visual scarring of the landscape as a result of the prospecting activities.
- Nuisance and health risks caused by an increase in the ambient noise level as a result of noise and vibration impacts associated with the operation of vehicles, machinery and equipment.
- Increased dust pollution due to vegetation clearance and vehicles driving on gravel roads and drilling.
- Gaseous emissions from vehicles and machinery may cause an impact on ambient air quality.
- Generation of additional general waste, litter and building rubble and hazardous waste.
- Minor impact caused by need for services i.e., water, electricity and sewerage systems during the prospecting phase causing additional strain on natural resources and service infrastructure.
- Minor change in traffic patterns as a result of traffic entering and exiting the site on the surrounding road infrastructure and existing traffic.
- Nuisance, health and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.
- Possibility of prospecting activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.
- Potential creation of very limited extent short term employment opportunities for the local community, during the prospecting phase.
- Multiplier effects on local economy will be positive, but very limited in extent and only short term.

Mitigation measures are included in this report, as well as the EMPR.

(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

From this previous research records conducted in the area; the specialist concluded that the general region is significant from a heritage perspective. Heritage sites are likely to include graveyards, Iron Age/Farmer and Historical remains. Since heritage sites, e.g., graves, are not always clearly identifiable as it might consist of stone cairns, it is advised that a qualified archaeologist inspect the proposed prospecting sites prior to drilling to establish whether the sites might be sensitive from a heritage perspective.

The following recommendations were made in terms of the National Heritage Resources Act (Act No. 25 of 1999) in order to avoid the destruction of heritage remains in areas demarcated for prospecting:

- It is recommended that the areas associated with the identified sites be avoided by the proposed prospecting activities. Should this not be possible, a qualified archaeologist must be present on-site during prospecting in order to limit potential impact on heritage resources.
- The 500 m buffer zone surrounding perennial/non-perennial rivers and dams, as well as the indicated areas associated with hills (gradient buffer) are potentially sensitive from a heritage perspective. Care should be exercised when prospecting in these vicinities.
- It is advised that a qualified archaeologist be contacted whenever uncertainty regarding potential heritage remains are encountered.
- Prospecting should not take place in the vicinity of stone cairns, potential burial sites, stonewalling, building ruins or any other heritage material or structures.
- Should the prospecting outcome result in further development or construction, a full Phase 1 Archaeological Impact Assessment must be conducted on the affected area if triggered. Also, a full Phase 1 AIA must be done should the cumulative impact of the proposed prospecting exceed 0.5 ha.
- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the prospecting phase, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed, all activities must be suspended,

and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)).

- From a heritage point of view, prospecting may proceed on the demarcated portions, subject to the abovementioned conditions and recommendations.

15. Other matters required in terms of sections 24(4)(a) and (b) of the Act

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as Appendix 4).

The EAP included all aspects as required by the EIA regulations, 2014 for the EIA and EMPr as described in the Executive Summary of this report. Please refer to Part A Section 3 (g).

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Draft environmental management programme

a) Details of the EAP

(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

Herewith, it is confirmed that the requirement for the provision of the details and expertise of the EAP are already included in PART A, Section 1(a) of this report.

b) Description of the Aspects of the Activity

(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1) (h) herein as required).

Herewith, it is confirmed that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1) (h) herein as required.

c) Composite Map

(Provide a map (Attached as an Appendix) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers).

Refer to Appendix 6.

d) Description of Impact management objectives including management statements

i) Determination of closure objectives

(Ensure that the closure objectives are informed by the type of environment described).

The prospecting activities is dependent on the preceding phase (non-invasive). Prospecting is conducted in phases, where the activities and location of drilling to sample soil is dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot be predetermined. Mapping of prospecting activities can also not be conducted.

The closure objectives include:

- Ensure that there are no safety risks associated with the drill boreholes through drill hole capping and backfilling.
- Rehabilitate any pollution that occurred through hazardous spills or waste materials and remove the source of the pollution.
- Establish an area that is not susceptible to soil erosion.
- Re-vegetate disturbed areas with endemic plant species that occur naturally within the area.

ii) **Volumes and rate of water use required for the operation**

Water for drilling will require 500l per day. Water will be provided by the drilling company. No water will be abstracted from any water resource in the prospecting

iii) **Has a water use licence been applied for?**

It is not required from the applicant to apply for a water use license, due to the low volume of water required for prospecting.

iv) Impacts to be mitigated in their respective phases

e) Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Please refer to Table 17 for the above requested information.					

f) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ().

Table 17: Measures to rehabilitate the environment affected by the undertaking of any listed activity, impact management outcomes, and impact management actions for

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
• Clearing of vegetation and topsoil for drilling • Stockpiling of soil from drilling positioned for later rehabilitation. • Prospecting including	Minor loss and disturbance to topsoil as a result of clearing of vegetation and drilling. When vegetation is cleared and the topsoil is stripped, the soil's natural structure is disturbed and as a result the natural cycle is broken exposing the bare soil to erosion. Vehicles driving on these soils causes compaction of soils and reduces the	**Prevent and reduce through management measures.** • Demarcation of prospecting areas: • Areas to be prospected must be clearly demarcated. • Sensitive areas to be avoided as prescribed by specialist studies must be avoided and prospecting may not take place in these demarcated sensitive areas.	Impact avoided. All topsoil used in concurrent rehabilitation. Rehabilitation objectives and standards	Rehabilitation objectives and standards	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
diamond core drilling, logging and sampling of the borehole core, • Dust Suppression. • Refilling drilled holes	soil's ability to be penetrated by root growth. Compaction also increases erosion potential. When soils are not stripped and stockpiled according to the soil stripping guidelines these soils would have lost their natural physical and chemical properties, reducing the topsoil's ability to be a plant growth medium. The above factors all contribute to a loss of the topsoil's ability to be a resource through alterations and removal.	• A final prospecting plan must be compiled clearly showing areas to be drilled and no-go areas. The plan must be approved by all specialists. • A final prospecting plan will be compiled and provided to all registered I&AP's 30 days before the commencement of the physical prospecting activities. **Stripping of topsoil:** • Clearing of areas to take place a maximum of one month prior to intended prospecting in the area. • Stripping of topsoil will not take place during rain or excessive wind; and • The top 30 cm of vegetation and topsoil is to be stripped from the area to be prospected. **Storage of topsoil / overburden:** • Topsoil (top 30cm) is to be stored in predetermined topsoil berms, (+/- 5m) outside the boundary of the specific area; and • Topsoil stockpiles will be restricted to 1.5 to 2m in height.			
	Hydrocarbon spills on soil can occur where heavy machinery and vehicles are parked such as the hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is always a chance of these breaking down and/or leaking.	**Prevent and reduce and remedy through management measures.** • All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks. • All leaks will be cleaned up immediately using an absorbent material and spill kits, in the prescribed manner; and • The approved Integrated Water and Waste Management Plan to be implemented. ***<u>Hydrocarbons and hazardous waste</u>*** • All hazardous waste generated shall be kept separate and shall not be mixed with general waste; and	Impact avoided. No signs of soil contamination and loss of topsoil due to contamination. Meet rehabilitation objectives and standards.	Rehabilitation objectives and standards Spill procedure Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended] • Section 2 Declaration of grouped hazardous substances. - Section 9 (1)	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		• All hazardous waste shall be stored within a sealed drum on an impermeable surfaced area within the central waste storage and transition area.		Storage and handling of hazardous chemical substances - Section 18 Offences Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995) - Section 4 Duties of persons who may be exposed to hazardous chemical substances SANS 10234: 2008: Globally Harmonized System of classification and labelling of • chemicals (GHS)	
	Stormwater, erosion and siltation impacts due to a lack of implementing temporary measures to manage stormwater run-off quantity and quality.	**Prevent and reduce and remedy through management measures.** • A generic Stormwater Management Plan (SMP) to be developed for the collective area where prospecting will occur, (or the existing SMP updated, where applicable for present and future activities) and should include the management of stormwater during drilling, as well as the installation	Impact avoided. No signs of soil contamination and loss of topsoil due to contamination.	Rehabilitation objectives and standards Spill procedure GN704 Regulations in terms of the National Water Act,	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area. • Temporary stormwater management systems (such as sandbags) will be installed to prevent stormwater from entering or exiting the area where prospecting will occur, which could result in silt laden surface water from draining into natural drainage lines • The slopes of the area where prospecting activities will occur, should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scrub (hydrologic action by water that causes erosion). A maximum gradient of 1:3 is recommended. • If necessary, temporary diversion channels should be constructed ahead of the stockpiles (if relevant) to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream (down gradient) of the prospecting area. • Existing vegetation must be retained as far as possible to minimise erosion problems. • Rehabilitation of the prospecting area shall be planned and completed (after conclusion of the prospecting activities) in such a way that the run-off water (if any) will not cause erosion. • Visual inspections shall be done on a weekly basis with regard to the stability of the temporary water control structures, erosion and siltation (if required). • Sediment-laden run-off from cleared areas should be prevented from entering rivers and streams. • No river or surface water may be affected by silt emanating from the prospecting area • No wastewater may run freely into any of the surrounding naturally vegetated areas.	Meet rehabilitation objectives and standards.	1998 (Act No 36 of 1998) Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended] • Section 2 Declaration of grouped hazardous substances. - Section 9 (1) Storage and handling of hazardous chemical substances - Section 18 Offences Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995) - Section 4 Duties of persons who may be exposed to hazardous chemical substances SANS 10234: 2008: Globally Harmonized	

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
				System of classification and labelling of • chemicals (GHS)	
	Contamination of stormwater runoff and ground water, caused by chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from heavy vehicles and machinery and fuel storage area.	**Prevent and reduce through management measures.** In accordance with Government Notice 704 (GN 704), the onsite management should: • Keep clean and dirty water separated. • Contain any dirty water within a system; and • Prevent the contamination of clean water. In order to achieve these objectives, the following stormwater management measures must be implemented on the site to ensure that that potential stormwater impacts are kept to a minimum: • Clean and dirty stormwater needs to be separated. Dirty stormwater may not be released into the environment and should be contained and treated on site. • All temporary storm water infrastructure (if any) on-site shall be maintained and kept clean throughout the prospecting period. • Immediate reporting of any polluting or potentially polluting incidents so that appropriate measures can be implemented. • Fuel and oil spills shall be treated immediately by appropriate mop-up products. Several hydrocarbon absorption/remediation products (i.e., Spill kits) must be placed throughout the site. • Use of bunds or traps to ensure full containment of hydrocarbon and other hazardous materials are mandatory.	Impact avoided. No signs of soil contamination and loss of topsoil due to contamination. Meet rehabilitation objectives and standards.	Rehabilitation objectives and standards Spill procedure GN704 Regulations in terms of the National Water Act, 1998 (Act No 36 of 1998) Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended] • Section 2 Declaration of grouped hazardous substances. - Section 9 (1) Storage and handling of hazardous chemical substances - Section 18 Offences Hazardous Chemical Substances Regulations, 1995	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		• Any contaminated material is disposed of in an appropriate manner and the potential risks associated with such spills are limited. • Stormwater leaving the site must in no way be contaminated. • Ensure good housekeeping practices. • Increased runoff should be managed using berms and other suitable structures as required to ensure flow velocities are reduced; and • Removal of spills, rainwater and waste produced during clean-up of the bunds – shall be done in accordance to relevant specifications.		(Government Notice 1179 of 1995) - Section 4 Duties of persons who may be exposed to hazardous chemical substances SANS 10234: 2008: Globally Harmonized System of classification and labelling of • chemicals (GHS)	
	Potential Loss and degradation of wetlands	**Reduce through management measures.** • Erosion management and sediment controls should be implemented. This can be obtained by proper catchment land use, including stormwater management measures and sediment input controls. • It is critical that an alien vegetation control programme is implemented, as encroachment of alien vegetation is already apparent in the study area and is expected to increase as a result of the disturbances. • No further encroachment by surrounding residential and commercial developments should take place within 500 m of the wetlands. • Disturbance to any wetland crossings must be minimised and suitably rehabilitated. The design of bridges and pathways should allow for wetland soil conditions to be maintained both upstream and downstream of the crossing to such a degree that	Erosion management and sediment controls should be implemented. Alien and invasive vegetation management plan implemented, and outcomes achieved.	Report Desktop Wetland Verification and Delineation For the Application of a Prospecting Right on several Portions of the Farms Golden Valley 621 IQ, Kaalfontein 44 IQ, Koestersfontein 45 IQ, Migalsoord 152 IQ, Rietpoort 395 JQ, Sluis 46 IQ, Vaalbank 512 JQ and Zuikerboschfontein 151 IQ,	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		wetland vegetation community structures upstream and downstream of the crossing are maintained. • It must be ensured that flow connectivity along the wetland features is maintained. Regular maintenance of all bridges and pathways must take place in order to minimise the risk of further degradation to wetland habitat.		Magaliesburg, Gauteng Province, Elemental Sustainability, 2021	
	The site has sections which ranges between transformed, slightly impacted to natural, however, the onset of prospecting activities might result in impacts to the natural environment due to increased movement, traffic and large machinery to the area. Heavy machinery and vehicles might result in compaction of the soil and destruction of vegetation habitat which in turn will also impact vegetation and on the animals that use the area as habitat. All ridge and sensitive features shown in Figure 6 and Figure 20 should be avoided where possible as impacts will be more severe within these areas. Construction (or additional construction activities) will result in increase of potentially destructive movement within the compromised area.	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within other specialist reports and Environmental Management Programme (EMPr). • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. • Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species.	Meet rehabilitation objectives and standards. Ecological management measures implemented, and outcomes achieved.	As set out in Report: Cold Gold Trading (Pty) Ltd – Prospecting Right, Terrestrial Ecology and Biodiversity Impact Assessment and Management Plan, Enviridi Environmental Consultants, 2021	Construction and Operation
	If ridges cannot be avoided, impacts will occur and could possibly damage the integrity of the areas by the movement of the machinery and fragmentation caused by large machinery trying to get access to the areas if it is located within the ridge or	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within other specialist	Meet rehabilitation objectives and standards. Ecological management measures	As set out in Report: Cold Gold Trading (Pty) Ltd – Prospecting Right, Terrestrial Ecology and Biodiversity	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
	rocky outcrop areas. The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. As noted, it is recommended that all ridge and sensitive features shown in Figure 6 and Figure 15 should be avoided where possible as impacts will be more severe within these areas.	reports and Environmental Management Programme (EMPr). • To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. • Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species. • Ensure routes are planned before hand to ensure damage is kept to a minimum as vehicles need to move into the ridge areas to obtain access to the prospecting boreholes. • As mentioned, plan and avoid sensitive features before the locations are selected and ideally avoid sensitive areas completely. Continuous rehabilitation of the area should occur, immediate closure and rehabilitation of the holes drilled to ensure no animals fall into the holes drilled and vegetation will recover as well. This will entail the spreading of topsoil, revegetation and management of invasive species.	implemented, and outcomes achieved.	Impact Assessment and Management Plan, Enviridi Environmental Consultants, 2021	
	Development related activities may lead to the loss of floral species of conservation concern. Ridges and conservation worthy areas should be avoided and includes Class 1 & Class 2 ridges found on the property, rocky outcrops, the Bloubank River and various of its tributaries as well as tributaries of the Magalies River.	**Reduce through management measures.** • All footprint areas should remain as small as possible. • A survey for SCC species on the project footprint area should be undertaken by a suitably qualified specialist prior to the start of construction once the footprints are known. Appoint an ECO to oversee the activities and ensure that ecological aspects are kept in mind.	Meet rehabilitation objectives and standards. Ecological management measures implemented, and outcomes achieved.	As set out in Report: • Cold Gold Trading (Pty) Ltd – Prospecting Right, Terrestrial Ecology and Biodiversity	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
	This will limit impacts on the natural biodiversity and prevent disturbance of these unique features present. The SCC Pearsonia bracteata is classified as Near Threatened (NT) in terms of the SANBI Red List and is considered to have a low likelihood of occurrence on the project area. Two (2) species protected in terms of the TNCA were identified to occur on the project area during the site visit, namely Cussonia paniculata (Highveld cabbage tree) and Protea roupelliae (Silver sugar bush). The activity will be short term, temporary and local, which reduces the risk for high impacts, but unmanaged will likely still have low to medium impacts. Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas.	• If any SCC are encountered within the subject property in the future, the following should be ensured: - If any threatened species will be disturbed, ensure effective relocation of individuals to suitable offset areas or within designated open space on the subject property. - All rescue and relocation plans should be overseen by a suitably qualified specialist. - Obtain relevant permits/consent, if applicable, for each protected or endangered floral species identified within the proposed development area that will be destroyed. • Human and vehicle movement should be restricted from taking place in sensitive habitats. • Ridges are considered to be of high sensitivity and recommended to be No-go areas for the invasive prospecting activities.		Impact Assessment and Management Plan, Enviridi Environmental Consultants, 2021	
	Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas.	**Reduce through management measures.** • Ensure awareness amongst all staff, contractors and visitors to site to not needlessly damage flora. • If required, a management plan for control of invasive/exotic plant species needs to be implemented for all footprint areas, especially if rehabilitation is found to be difficult or not successful and revegetation of the areas where vegetation has been removed is required. This will be ongoing until the end of the closure phase.	Meet rehabilitation objectives and standards. Ecological management measures implemented, and outcomes achieved.	As set out in Report: Cold Gold Trading (Pty) Ltd – Prospecting Right, Terrestrial Ecology and Biodiversity Impact Assessment and Management Plan, Enviridi	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees.		Environmental Consultants, 2021	
	Impacts on the water resources (and potential wetlands) located within and around the area designated for development may occur. This may be due to pollutants entering the water resource, specifically petroleum related waste products which could possibly leak from the vehicles and machines used to conduct the drilling.	**Reduce through management measures.** • Demarcate specific areas to be developed and remain clear of other areas where activities are not necessary. • Adhere to all management and mitigation measures as prescribed within the wetland specialist report. • If possible, find an alternative placement for features where possible as to prevent placement within a wetland or wetland soils. The wetlands or associated buffer should be sufficient to protect ecological functioning of the area. • Keep spill kits and hazmat prevention kits on-site to remediate any spill immediately before reaching the natural environment. Continuous rehabilitation of the area should occur until the drilling is completed and confirmed as rehabilitated.	Meet rehabilitation objectives and standards. Ecological management measures implemented, and outcomes achieved.	As set out in Report: Cold Gold Trading (Pty) Ltd – Prospecting Right, Terrestrial Ecology and Biodiversity Impact Assessment and Management Plan, Enviridi Environmental Consultants, 2021	Construction and Operation
	The results may be positive if rehabilitation has been done correctly and the site may be rehabilitated back to a natural landscape. Initial movement around the site to ensure rehabilitation will have similar results as may be expected during the Construction Phase.	• Prevent impacts from reaching downstream water resources by ensuring no spillage and proper handling of infrastructure during removal. Continuous rehabilitation of the area should occur until the drilling is completed and confirmed as rehabilitated.	Meet rehabilitation objectives and standards. Ecological management measures implemented, and outcomes achieved.	As set out in Report: Cold Gold Trading (Pty) Ltd – Prospecting Right, Terrestrial Ecology and Biodiversity Impact Assessment and Management Plan, Enviridi Environmental Consultants, 2021	Rehabilitation
	Alteration of archaeological, historical and palaeontological resources that	**Protect heritage resources through developing and implementing procedures.**	No loss of newly discovered material.	National Heritage Resources Act, 1999 (Act No. 25 of	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
	may be discovered during earthworks and drilling.	• It is recommended that the areas associated with the identified sites be avoided by the proposed prospecting activities. Should this not be possible, a qualified archaeologist must be present on-site during prospecting in order to limit potential impact on heritage resources. • The 500 m buffer zone surrounding perennial/non-perennial rivers and dams, as well as the indicated areas associated with hills (gradient buffer) are potentially sensitive from a heritage perspective. Care should be exercised when prospecting in these vicinities. • • It is advised that a qualified archaeologist be contacted whenever uncertainty regarding potential heritage remains are encountered. • Prospecting should not take place in the vicinity of stone cairns, potential burial sites, stonewalling, building ruins or any other heritage material or structures. • Should the prospecting outcome result in further development or construction, a full Phase 1 Archaeological Impact Assessment must be conducted on the affected area if triggered. Also, a full Phase 1 AIA must be done should the cumulative impact of the proposed prospecting exceed 0.5 ha. • Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the prospecting phase, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed, all activities must be suspended, and the relevant heritage		1999) and associated regulations. • South African Heritage Resources Agency Guidelines.	

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)). • From a heritage point of view, prospecting may proceed on the demarcated portions, subject to the abovementioned conditions and recommendations.			
	Visibility from sensitive receptors / visual scarring of the landscape as a result of the prospecting activities.	**Reduce through controlling management measures.** • Unnecessary lights should be switched off during the day and / or night to avoid light pollution. • If lighting is required, the lighting will be located in such a place and such a manner so as to minimise any impact on the surrounding community and fauna. • Install temporary lights that will not create a night sky glow. • Security lighting should be designed in such a way as to minimise emissions onto undisturbed areas on site and neighbouring properties. Light fittings should face downwards. • Housekeeping on site should be enforced. • Rehabilitation measures such as re-vegetation and plan to be implemented. • Reduce the prospecting period through careful planning and productive implementation of resources. • Plan the placement of lay-down areas and any potential temporary prospecting camps in order to minimise vegetation clearing. • Restrict the activities and movement of workers and vehicles to the immediate prospecting site and existing access roads. • Ensure that rubble, litter and issued materials are managed and removed regularly.	Rehabilitation objectives and standards	• Rehabilitation objectives and standards	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		• Ensure that all infrastructure and the site and general surrounds are maintained in a neat and appealing way; and • Reduce and control dust through the use of approved dust suppression techniques.			
	Nuisance and health risks caused by an increase in the ambient noise level as a result of noise and vibration impacts associated with the operation of vehicles, machinery and equipment.	**Reduce through controlling measures.** • Vehicles and machinery will be regularly serviced to ensure acceptable noise levels are not exceeded. • Silencers will be utilised where possible. • Heavy vehicle traffic should be routed away from noise sensitive areas where possible. • Noise levels should be kept within acceptable limits. All noise and sounds generated should adhere to South African Bureau of Standards (SABS) specifications for maximum allowable noise levels for construction sites. No pure tone sirens or hooters may be utilised except where required in terms of SABS standards or in emergencies. • With regard to unavoidable very noisy activities in the vicinity of noise sensitive areas, the Site Manager (SM) should liaise with local residents and a suitably qualified ecologist and how best to minimise impacts, and the local population should be kept informed of the nature and duration of intended activities. • The SM should take measures to discourage labourers from loitering in the area, causing noise disturbance. • Noise impacts should be minimised by restricting the hours (between 06h00 and 18h00 on Monday to Friday, and 06h00 and 13h00 on Saturdays), during which the offending activities are carried out	Impact reduced. Records of service of all operational vehicles. Silencers utilised where applicable. All employees wear PPE where required.	Meet the South African National Standard SANS 10103:2008 Meet South African Bureau of Standards (SABS) specifications for maximum allowable noise levels for construction sites. • Meet the requirements of the Mine Health and Safety Act (Act 29 of 1996)	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		and, where possible, by insulating machinery and/or enclosing areas of activity. • No noisy activities to occur on Sundays or public holidays. • Personal Protective Equipment to all persons working in areas where high levels of noise can be expected; Signs where it is compulsory. • Regular inspections and maintenance of equipment, vehicles and machinery to prevent unnecessary noise.			
	Increased dust pollution due to vegetation clearance and vehicles driving on gravel roads and drilling.	**Reduce through controlling measures.** • Dust suppression shall be implemented during dry periods and windy conditions. • All exposed surfaces should be minimised in terms of duration of exposure to wind and stormwater. • Excavation, handling and transportation of erodible materials shall be avoided under high wind conditions (excess of 35km/hr) or when a visible dust plume is present. • Ensure that the shortest routes are used for material transport. • Ensure that stockpile height is kept to a minimum. • Minimise travel speed on unpaved roads. • Implement and actively monitor dust fallout generated in the 8 major wind directions on the borders of the site. • Implement monthly site inspection to check for possible areas of dust generation not addressed or not effectively managed. • Spray areas to be cleared with water. • Ensure minimum travel distance between working areas and stockpiles. • Ensure that topsoil for stockpiles is sprayed with water before tipping to prevent dust generation. • Ensure graded areas are sprayed with water. • Minimise the number of graded areas.	Impact reduced. Speed limit roads signs, complying with the South African Road Signs Manual on site. Dust fall monitoring programme should be implemented. Dust fallout and Particulate Matter (PM) levels may not exceed the limits as set out in the Dust Control Regulations above. Monitoring dust stands occurring on site.	South Africa National Standard 1929:2005: Ambient Air Quality: Limits for common pollution Meet the requirements of the National Dust Control regulations, 2013, as published in the Government Gazette (No. 36974) of 1 November 2013 (GNR 827 of 1 November 2013), in terms of the National Environmental Management: Air Quality Act 39 of 2004 •	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		• Ensure that shortest routes are used for material transport. • Load and offload material, as far as possible, downwind of topsoil stockpiles.			
	Gaseous emissions from vehicles and machinery may cause an impact on ambient air quality.	• All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks. • Proper planning of movements (vehicle trips) and working of machinery should take place, in order to avoid unnecessary trips and hours of operation.	Rehabilitation objectives and standards	• Rehabilitation objectives and standards	Construction and Operation
	Generation of additional general waste, litter and building rubble and hazardous waste.	**Control through management measures.** • A central waste storage and transition area shall be established within the site camp. • The central waste storage and transition area shall be surfaced and demarcated appropriately. • Portable wheelie bins shall be placed throughout the site camp as well as at the remainder of the site and at all working areas in the field. • Wheelie bins shall be colour coded and labelled to identify the waste stream for which it is intended. • All portable wheelie bins and other containers shall be emptied at the central waste storage and transition area a minimum of once a week or when filled, as to avoid waste build up. • The waste shall be removed (within 30 days) by a licensed waste service provider as shall be disposed of at a licensed waste landfill site and records of safe disposal (as required for hazardous wastes) shall be supplied to the Contractor. These records shall be kept on site by the ESM. • Wherever possible and practical, waste materials generated on site must be recycled; and • Waste specific (hazardous, timber, steel etc.) mitigation measures to be implemented.	Waste management on site visible.	Waste management on site visible. Waste Classification and Management Regulations and Norms and Standards for the assessment of for landfill disposal and for disposal of waste to landfill, 2013 (Government Notice 634 – 635 of 2013) promulgated in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [as amended] and: Regulations regarding the planning and	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
				management of residue stockpiles and residue deposits from a prospecting, exploration or production operation (GN R. 632 of 2015) SANS 10234: 2008: Globally Harmonized System of classification and labelling of • chemicals (GHS)	
	Minor impact caused by need for services i.e., water, electricity and sewerage systems during the prospecting phase causing additional strain on natural resources and service infrastructure.	**Reduce through controlling management measures.** • Energy savings measures to be implemented at the site e.g.: ➢ No lights to be switched on unnecessarily. ➢ Only security lights to be switched on at night. • Energy saving bulbs to be installed; and • Water should be recycled as far as possible to avoid any additional water usage.	Impact avoided. Recycling of used and contaminated water through wastewater and sewage treatment and reuse.	• -	Construction and Operation
	Minor change in traffic patterns as a result of traffic entering and exiting the site on the surrounding road infrastructure and existing traffic.	**Reduce through controlling management measures.** • Where feasible heavy vehicles should not operate on public roads during peak hours; and • Heavy vehicles should adhere to the speed limit of the road.	Impact reduced. Speed limit roads signs, complying with the South African Road Signs Manual on site.	Reduce through controlling measures Set Speed Limits • South African Road Signs Manual	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
	Nuisance, health and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.	**Prevent through controlling management measures.** • Drivers will be enforced to keep setting speed limits. • Trucks will be in a road-worthy condition. • Roads and intersections will be signposted clearly. Only main roads should be used. • Where feasible vehicles should not operate on public roads during peak hours. • Vehicles should adhere to the speed limit of the road. • Heavy vehicles should always travel with their head lights switched on. • Heavy vehicles should not stop on the road to pick up hitchhikers – No stopping on the road approaching the site will be allowed. • Single directional traffic shall be controlled through a stop-go system or any other appropriate traffic control method. • Cold Gold (Pty) Ltd shall be responsible for ensuring that suitable access is maintained for public traffic to all relevant businesses and properties; and • All traffic accommodation measures are to conform to the latest edition of the South African Road Signs Manual.	Impact reduced. Speed limit roads signs, complying with the South African Road Signs Manual on site. South Africa National Standard 1929:2005: Ambient Air Quality: Limits for common pollution Meet the requirements of the National Dust Control regulations, 2013, as published in the Government Gazette (No. 36974) of 1 November 2013 (GNR 827 of 1 November 2013), in terms of the National Environmental Management: Air Quality Act 39 of 2004 Dust fall monitoring programme should be implemented.	Reduce through controlling measures Set Speed Limits South African Road Signs Manual South Africa National Standard 1929:2005: Ambient Air Quality: Limits for common pollution National Dust Control regulations, 2013, as published in the Government Gazette (No. 36974) of 1 November 2013 (GNR 827 of 1 November 2013), in terms of the National Environmental Management: Air Quality Act 39 of 2004 Approved dust fall out monitoring programme	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
			Dust fallout and Particulate Matter (PM) levels may not exceed the limits as set out in the Dust Control Regulations above. Monitoring dust stands occurring on site.		
	Impact on future planned Road PWV7: Part of the future route traverses the applicant site.	• The Gauteng Strategic Transportation Network namely, provincial Road(s): PWV7, K16 and K67 may be affected and as such, when an application for a change of land use, is lodged with the relevant authority, the said application must be lodged with the Gauteng Department of Roads and Transport. • An application must be submitted to the Department for a way leave if any part of a proposed service falls within 95,0 m (measured from the centreline of any of the Department's existing or future road(s)/railway line or within a 500,0 m radius of any intersection on said road(s)/railway line.	• Approval obtained from GDRT to continue prospecting.	• Gauteng Transport Infrastructure Act, 2001 (Act No. 8 of 2001) [as amended];	Construction and Operation
	Possibility of prospecting activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.	**Prevent through controlling management measures.** • All workers will be sensitised to the risk of fire. • Smoking is only allowed in designated smoking areas and disposal of cigarette butts safely in sand buckets. • The Applicant shall ensure that the basic fire-fighting equipment is available on the site. • Extinguishers should be located outside hazardous materials and chemicals storage containers. • Fire response and evacuation: ➢ An Emergency Plan (including Fire Protection, Response and Evacuation Plan) is to be	Mine Health and Safety Act (Act 29 of 1996) An Emergency Plan (including Fire Protection, Response and Evacuation Plan) Veld and Forest Fire Act, 1998 (Act No. 101 of 1998) [as amended]	Impact avoided. No incidents of fires occurring on site. No one smoking in unauthorised areas. Proof / records of training in terms of the risk of fire and of the emergency management plan.	Construction and Operation

Activity Including Size/ scale	Aspects and potential impacts	Mitigation type and Measures	Standards to be achieved	Compliance with standards	Phase and / or time period for implementation
		prepared by the Applicant and conveyed to all staff on the site. ➢ Identify major risks to minimise the environmental impacts e.g., air pollution and contaminated effluent runoff.	- Section 12 (1) Duty of the landowner to prevent fire from spreading to neighbouring properties.	• Basic fire-fighting equipment located in the correct locations on site.	
	Potential creation of very limited extent short term employment opportunities for the local community, during the prospecting phase.	Local labour to be sourced where possible.	-	•	Construction and Operation
	Multiplier effects on local economy will be positive, but very limited in extent and only short term.	Supplies to be bought locally as far as possible.	-	•	Construction and Operation

g) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved)

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Please refer to Table 17 for the above requested information.				

i) Financial Provision

(1) Determination of the amount of Financial Provision

(a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation

Prospecting activities are to be undertaken in a manner which facilitates site rehabilitation and the restoration of existing land capabilities. The primary objectives for rehabilitation include:

- The facilitation of the re-establishment of the land use and capability to as close as reasonable to the original conditions.
- Removal of all infrastructure and material introduced to site,
- Removal of all wastes and their disposal
- Promotion of the rapid re-establishment of the natural vegetation and the restoration of the site ecology.

The disturbed areas shall be rehabilitated to ensure that:

- The biodiversity habitat is encouraging the new land use after the prospecting
- Eliminate any safety risk associated with drill holes and sumps through adequate drill hole capping and backfilling.
- Environment and resources are not subjected to physical and chemical deterioration,
- The site is reversed to almost its original state
- The after-use of the site is beneficial and sustainable in a long term
- All socio-economic benefits are maximized

The rehabilitation plan shall entail removal of all generated wastes, infrastructure and materials, re-vegetation of disturbed and cleared areas, rehabilitation of access roads, ensuring the growth of the existing grasses and plants species and cleaning of spillages.

(b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties

This Basic Assessment Report and Environmental Management Programme will be subjected to a public consultation period, whereby I&APs are given 30 days to comment.

(c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure

As previously mentioned, each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase 1 assessment and airborne/ ground geophysics survey programme will be initiated. Targets that have been prioritized through detailed anomaly will be tested by initial drilling.

The location and extent drill sites can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. Due to the nature of the activities, the impacts will be very limited and of short duration. The management plan is provided in such a manner as to ensure concurrent rehabilitation. The areas for drilling purposes will be the main area experiencing impacts. In this event the activities will be temporary in nature, and a detailed management plan has been provided to address potential impacts associated with these activities. The only rehabilitation that will specifically be required is borehole capping and re-vegetation:

Prospecting Hole capping

Drill holes must be permanently capped as soon as is practicable. Figure 27 below provides the prepared procedure for the secure plugging of exploration drill holes.

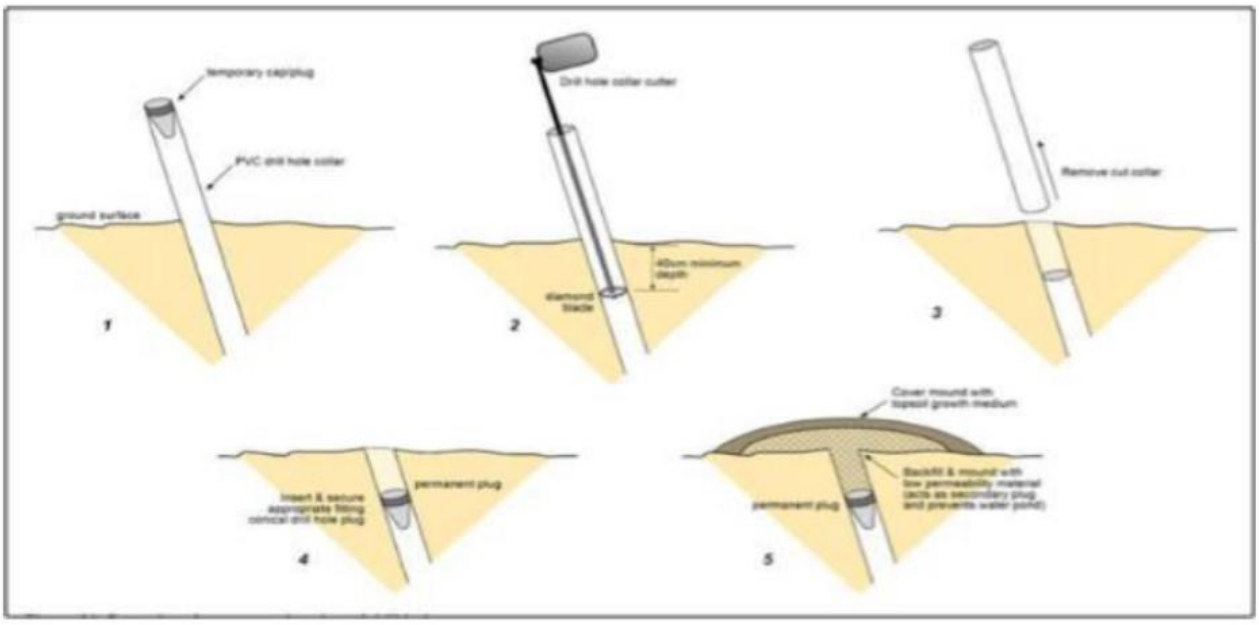

Figure 27 : Prospecting Hole Capping

Re- vegetation

It is recommended that a standard commercial fertilizer high in the standard elements is added to the soil before re vegetation, at a rate of 10 -20k g/ha (application rate to be confirmed based on input from a suitably qualified specialist). The fertilizer should be added to the soil in a slow-release granular form. A suitably qualified ecologist will be appointed to determine the appropriate veld grass mix for hand seeding.

Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.

(d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives

Due to the small extent and fairly short-term period of the prospecting activities and as shown in the Environmental Impact Assessment, the impacts will be of a low or very low significance. Rehabilitation will be conducted concurrently and will include borehole capping and re-vegetation. Detailed mitigation measures are provided in the EMPR to ensure the closure objectives are met.

(e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline

The closure cost assessment was conducted, and it was determined that an amount of **R 51 863.86** for each PR would be required for the closure and rehabilitation of 15 boreholes per prospecting right. The report will be submitted to the Department of Mineral Resources together with the Final Basic Impact Assessment report, if required.

The financial provision for each of the prospecting rights were calculated at **R 51 863.86** excl vat. The calculation of the rehabilitation cost is included in Appendix 11.

Table 18: Closure Cost per Prospecting Right

Closure Component			Unscheduled Closure			
		Applicable	Quantity	Unit	Unit Rate	Total Cost
1.	Infrastructure Areas - Prospecting Activities					
1.1	Sealing of Prospecting drilling holes					
1.1.1	Sealing of Prospecting drilling holes	Yes	15	per Unit	R1 319,45	R19 791,75
					Subtotal 1:	R19 791,75
2.	General Surface rehabilitation and placement of Topsoil					
2.1	Topsoil placement over rehabilitation area	Yes	0,6	ha	R4 250,00	R2 550,00
2.2	Rip and scarify	Yes	0,6	ha	R4 250,00	R2 550,00
2.3	Seeding	Yes	0,6	ha	R11 215,00	R6 729,00
					Subtotal 2:	R11 829,00
3.	P&G's, Contingencies and Additional Allowances					
3.1	Preliminaries and general	Yes	7,5	/sum	R2 371,56	R2 371,56
3.2	Contingencies	Yes	10	/sum	R2 371,56	R2 371,56
					Subtotal 3:	R4 743,11
4.	Pre-Site Relinquishment Monitoring and Aftercare					
4.1	Monitoring and Audits	Yes	1	/yr	R15 500,00	R15 500,00
					Subtotal 4:	R15 500,00
Grand Total Excl. Vat. (or Subtotal 1+2+3+4)						R51 863,86

(f) Confirm that the financial provision will be provided as determined.

The financial provision will be provided as determined.

The applicant submits that it is a mining company and is able to fund the planned prospecting from its operational budget. It is confirmed that the amount for financial provision is anticipated to be an operating cost and is provided for as such in the Prospecting Work Programme.

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

h) Monitoring of Impact Management Actions
i) Monitoring and reporting frequency
j) Responsible persons
k) Time period for implementing impact management actions
l) Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Construction, Operation and Rehabilitation PHASE				
• Compile detailed Prospecting Map	Surface water, Heritage, Biodiversity	• Compile prospecting map showing clearly: • Sensitive areas as identified by the specialists • Areas to be drilled for prospecting • access roads to be sued to drill locations	• Wetland Specialist • Biodiversity Specialist • Applicant • ECO	Initial start of the desktop assessment phase for prospering
• Clearing of vegetation and topsoil. • Stockpiling of overburden positioned for later rehabilitation. • Prospecting including diamond core drilling, logging and sampling of the borehole core, • Dust Suppression. • Refilling of drilled holes. • Revegetation drilled area.	Surface Water	• A Stormwater Management Plan (SMP) to be developed for the collective area where prospecting will occur, (or the existing SMP updated, where applicable for present and future activities) and should include the management of stormwater during excavation, as well as the installation of temporary stormwater and erosion control measures during prospecting, followed up by rehabilitation of the area. This Stormwater Management Plan to be monitored for implementation. • Visual inspections shall be done on a weekly basis with regard to the stability of the temporary water control structures, erosion and siltation. • Monitoring of Wetlands on a monthly basis during all phases of prospecting	• Applicant • Engineer • Wetland Specialist	After rain / storm events; and Monthly

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	Dust and air quality pollution	Dust shall be controlled in accordance with the requirements of the National Dust Control Regulations (GN 827, November 2013). This shall include compliance with regards to: A: Dust fall out standards- (b) 1200 mg/m^2/day averaged over 30 days in areas other than residential and light commercial areas measured using reference method ASTM 01739. • A Gravimetric Dust Monitoring program must be implemented on the site as stipulated in section 4 of GN 827 – National Dust Control Regulations, in terms of section 53(o), read with section 32 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).	• Applicant • Environmental Specialist	Monthly
	Ecological Monitoring and management	Specialist monitoring on Faunal and Floral aspects include the monitoring of effects operational processes have on vegetation and accompanied animal life within the immediate or surrounding areas of the operations. • Alien vegetation control and management. • Habitat and vegetation management. • Rehabilitation services include the rehabilitation of operational disturbed areas and hydrocarbon spill areas. • Sloping and re-vegetation of disturbed area to surrounding landscape; and • Remediation of soil at spill sites.	• Environmental Specialist	Visual inspections during all phases of the activities.

m) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

A Performance Assessment Review of the EMPR should be conducted annually and the environmental audit report will be submitted annually.

n) Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of any the environmental risk which may result from their work

The environmental awareness plan will include the following:

- Induction of all staff and workers.
- Monthly 'toolbox' talks (awareness talks).
- Risk assessments for specific tasks with supervisors and staff involved in the task on a daily basis, or as often as the task is taking place.

The following principles and training will apply to the Environmental Awareness Plan (safety, health and environmental (SHE) training and the Environmental Management System (EMS) training):

- All personnel, including contactors will as a minimum undergo general, SHE induction and awareness training.
- The Safety, Health, Environmental and Quality (SHEQ) Manager will identify the SHE is training requirements for all personnel and contractors. The training requirements will be recorded in a training needs matrix indicating particular training that must be undertaken by identified personnel and contractors. The training matrix will be administered by the Training Department; and Development of the Training Programme, which will include:
    - Job specific training – training for personnel performing tasks which could cause potentially significant environmental impacts.
    - Assessment of extent to which personnel are equipped to manage environmental impacts.
    - Basic environmental training.
    - EMS training.
    - Comprehensive training – on emergency response, spill management, etc.
    - Specialised skills.
    - Training verification and record keeping; and

- Periodic re-assessment of training needs, with specific reference to new developments, newly identified issues and impacts and associated mitigation measures.

General Awareness Training

- The HR Manager, together with the SHEQ Manager, will be responsible for the development of, or facilitating the development of, the required general SHE induction and awareness training. A general environmental awareness training module will be developed and integrated into the general induction programme. The general awareness training must include the Environmental Policy, a description of the environmental impacts and aspects and the importance of conformance to requirements, general responsibilities of personnel and contractors with regard to the environmental requirements and a review of the emergency procedures and corrective actions; and
- A Training Practitioner will conduct the general awareness training. The training presenter will keep a record of the details of all persons attending general awareness training. Such attendance registers shall indicate the names of attendants and their organisations, the date and the type of training received.

Specific Environmental Training

- Specific environmental training will be in line with the requirements identified in the training matrix; and
- Personnel whose work tasks can impact on the environment will be made aware of the requirements of appropriate procedures/work instructions. The SHEQ Manager will communicate training requirements to responsible supervisors to ensure that personnel and contractors are trained accordingly.

Training Evaluation and Re-training

- Effectiveness of the environmental training will be reflected by the degree of conformance to EMPr requirements, the result of internal audits and the general environmental performance achieved.
- Incidents and non-conformances will be assessed through the Internal Incident Investigation and Reporting System, to determine the root cause, including the possible lack of awareness/training.
- Should it be evident that re-training is required, the SHEQ Manager will inform the managers of the need and take the appropriate actions.
- General awareness training of all personnel shall be repeated every year; and

- The re-induction shall take into consideration changes made in the EMPr, changes in legislation, current levels of environmental performance and areas of improvement.

Emergency Procedures

- Emergency procedures, as relevant to this project, shall be implemented.
- The SHEQ Manager shall define emergency reporting procedures for the project.
- All personnel shall be made aware of emergency reporting procedures and their responsibilities.
- Any spills will be cleaned up immediately in accordance with relevant legislation; and
- Telephone numbers of emergency services, including the local firefighting service, shall be conspicuously displayed.

(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment

The procedure for dealing with environmental risk including the objectives, identification and calculation of environmental risks is described in the existing approved EMPR. A spill procedure should be developed and implemented by the applicant.

o) Specific information required by the Competent Authority

(Among others, confirm that the financial provision will be reviewed annually)

No specific information has been required by the Competent Authority at this point in time.

2) UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports ☒

b) the inclusion of comments and inputs from stakeholders and I&APs; ☒

c) the inclusion of inputs and recommendations from the specialist reports where relevant; ☒; and

d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein. ☒

Signature of the environmental assessment practitioner:

Elemental Sustainability

Name of company:

2021 – 05 - 11

Date:

-END-